Body Repairs
Jetta 2011 ➤
Jetta 2013 ➤

Edition 04.2020

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Repair Group overview for Body Repairs

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Repair Group

00 - General, Technical Data
50 - Body Front
51 - Body Center, Chassis, Roof
53 - Body Rear

Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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00 – General, Technical Data

1 General Information

(Edition 04.2020)

This repair manual only describes selected labor operations. If labor operations are not described, proceed as follows: separate the original joint and recreate it with the replacement part. Repairs using methods that differ from the original manufacturing process are described.

If sub-parts are delivered, fit them and butt weld them using a gas-shielded arc continuous weld seam.

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2 Vehicle Data

2.1 Vehicle Identification Number

Note

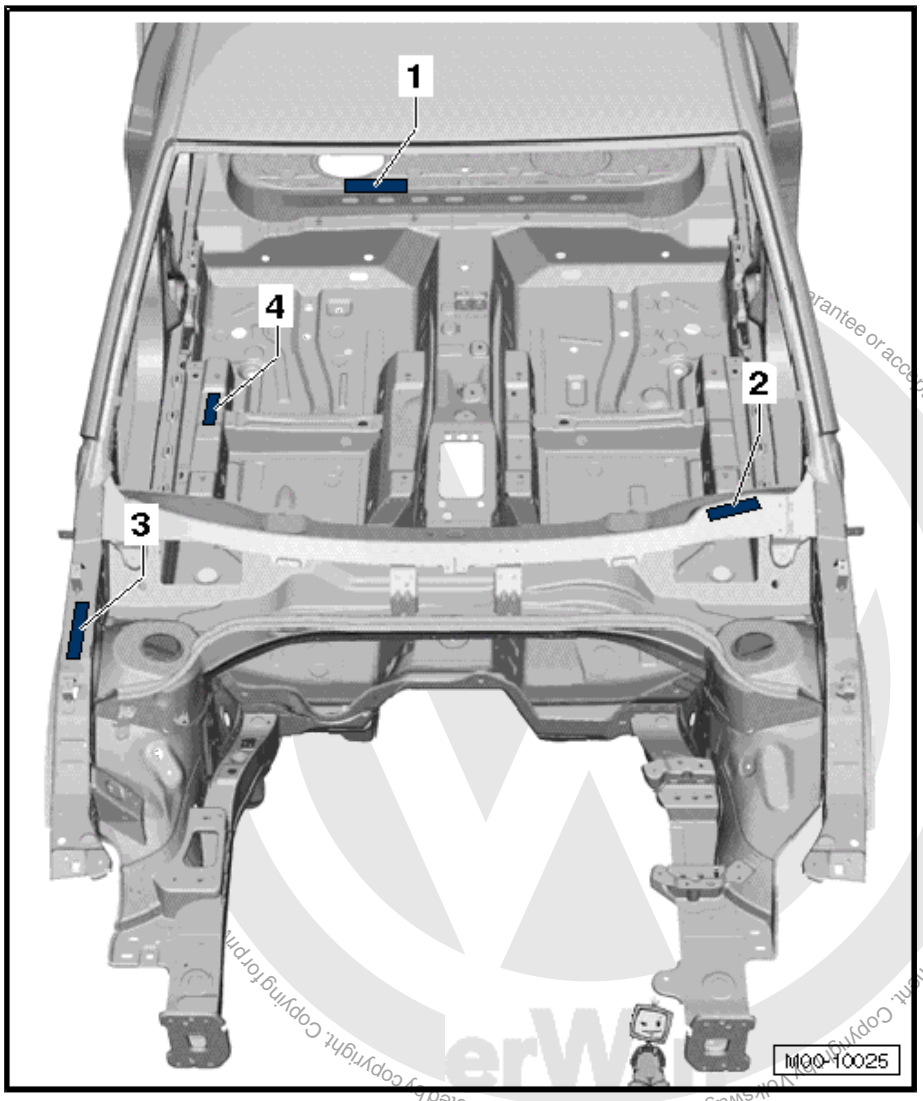
If a body part having the VIN on it must be replaced due to damage, service should be documented according to market requirements.

1 - VIN on the Rear Floor Panel

2 - VIN at the Bottom of the Windshield Frame on the Left Side

3 - VIN on the Top of the Longitudinal Member on the Right Side

4 - VIN on the Outside of the Mount for the Right Seat Crossmember



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2.2 Type Plate

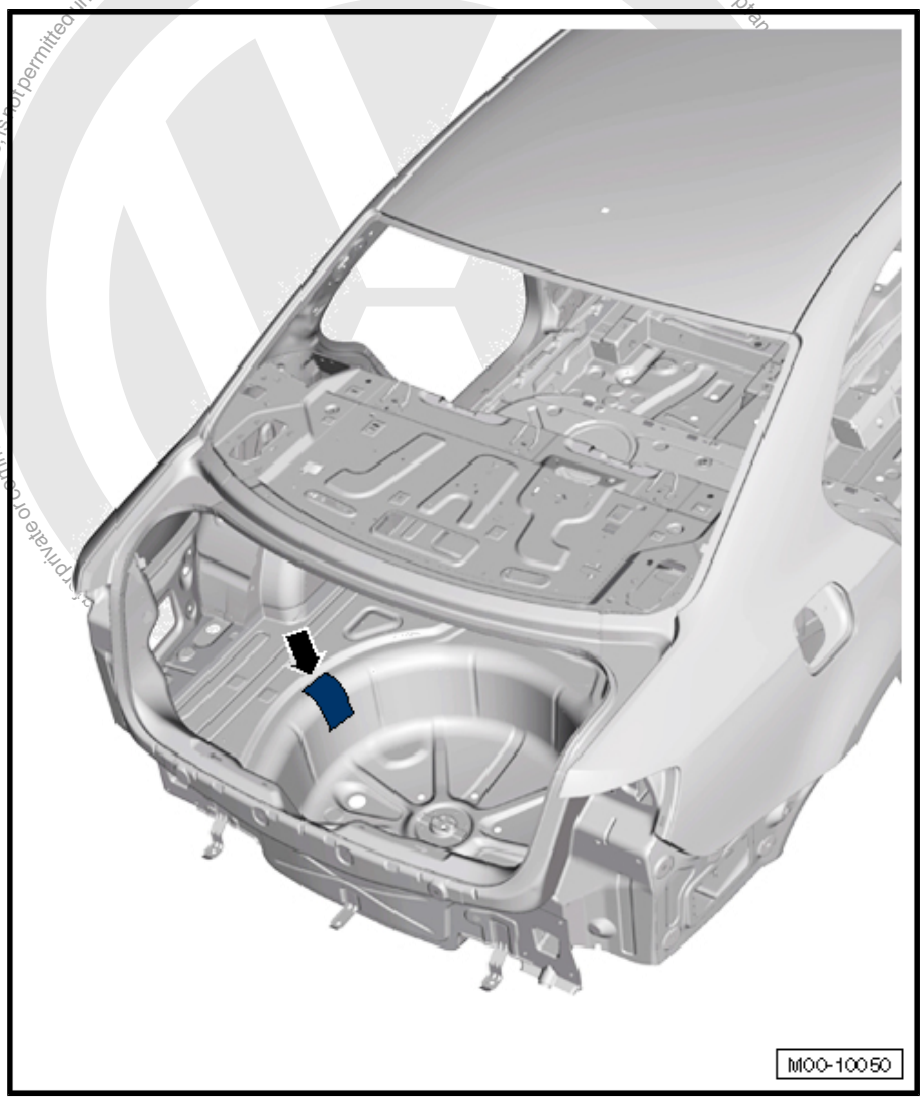
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Data plate -arrow- is on the left side of the B-pillar on left side and visible after opening the front door.

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2.3 Vehicle Data Label



Vehicle data plate -arrow- is secured in spare wheel well on left side in direction of travel.

3 Safety Precautions

Caution

If welding, soldering or cutting with spark-producing tools in foamed areas hazardous gases are produced.

- ***Never weld, solder or separate within 15 mm of molded foam parts.***
- ***Perform the procedures with extraction.***

Pay attention to the safety precautions. Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions .

Welding and sanding must be carried out with ventilation.

Clean the exhaust extraction system regularly.

Never weld and sand in any area at the same time.

Clean the work area regularly depending on the amount of dust.

Do not blow out the accumulated with compressed air.

Follow all country-specific regulations regarding accident prevention and safety on the workplace.

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4 Body Work Requiring System to be De-Energized

⇒ page 6

4.1 High-Voltage System, De-Energizing for Following Body Work

The high-voltage system must only be de-energized using Guided Fault Finding. Refer to the chapter High-Voltage System, De-Energizing.

When performing welding, sanding or cutting procedures near the high-voltage components, the system must be de-energized by a high-voltage technician.

The system must be de-energized by a high-voltage technician if using the straightening rack for body procedures.

Procedures after de-energizing may only be done by technicians trained in electrical systems.

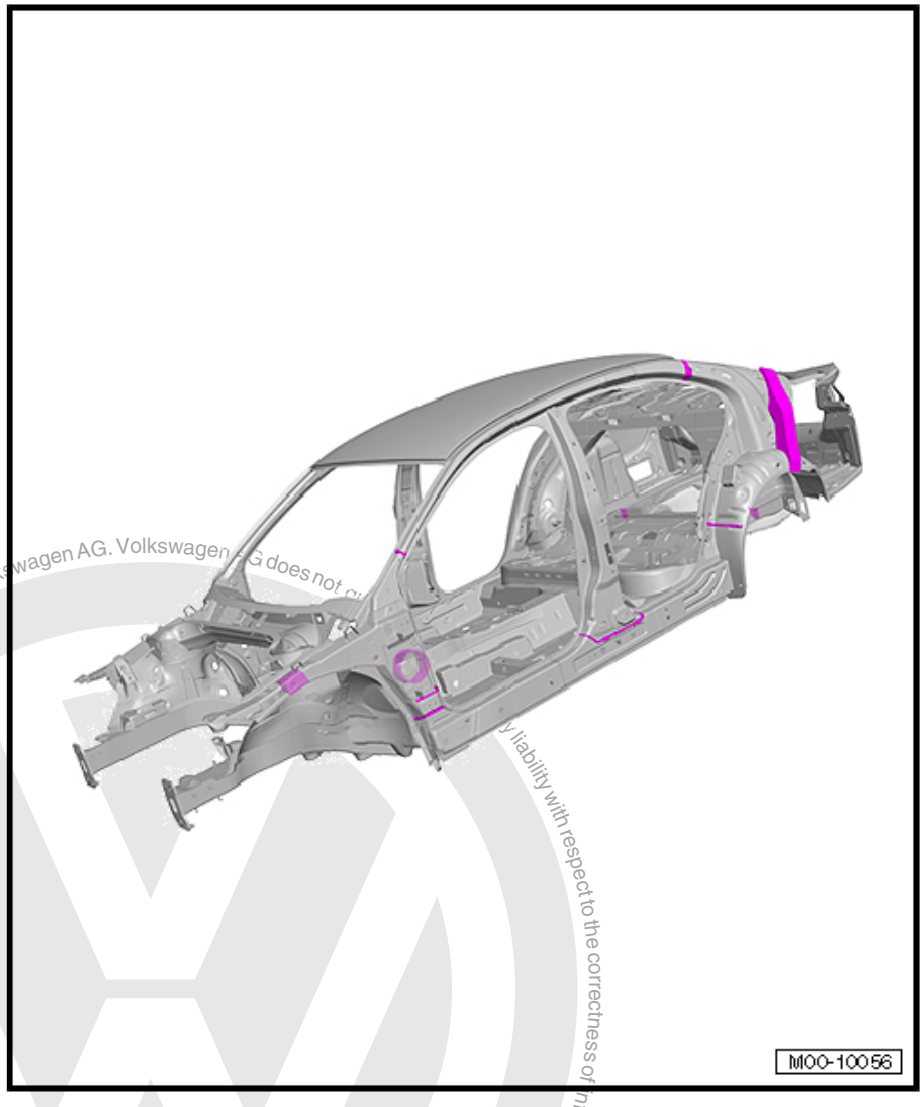
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5 Molded Foam Parts

Various hollow body areas are equipped with molded foam parts in this vehicle.

The transfer of driving noises into the passenger compartment are reduced by molded foam parts.

Exact positions of molded foam parts are depicted at the beginning of the respective repair descriptions.



Exact positions of molded foam parts are depicted at the beginning of the respective repair descriptions.

Note

Replacement parts made of foam will react and foam only when the temperature is approximately 180 °C (356 °F). For this reason, use Butyl Sealing Cord - AKL 450 005 05- or 2K Filler Foam - D 506 KD1 A3- for positioning the molded foam parts when performing a repair.

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Do the Following When Performing a Repair:

– Remove excess foam from vehicle.

– Apply corrosion protection, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.

Precondition

Before performing these work steps, the sheet metal to be replaced must be prepared for installation, for example, by cutting, fitting, corrosion protection.

Replacing Molded Foam Part

Either reuse the molded foam part or cut it from the universal Partition - 000 864 663- .

Secure the molded foam part to the body using Butyl Sealing Cord - AKL 450 005 05- .

Then apply the Butyl Sealing Cord - AKL 450 005 05- or the 2K Filler Foam - D 506 KD1 A3- to the molded foam part.

Secure new part by gently pressing on it around the molded foam part until it makes contact and then weld it.

The foam hardens within 25 minutes.

Do not perform any gas-shielded welding 15 mm next to the molded foam part.

After painting vehicle, seal cavities in the area of the repair.

6 Zinc-Coated Body Parts and High-Strength/Highest Strength Hot Formed Body Panels

6.1 Assembly

Note

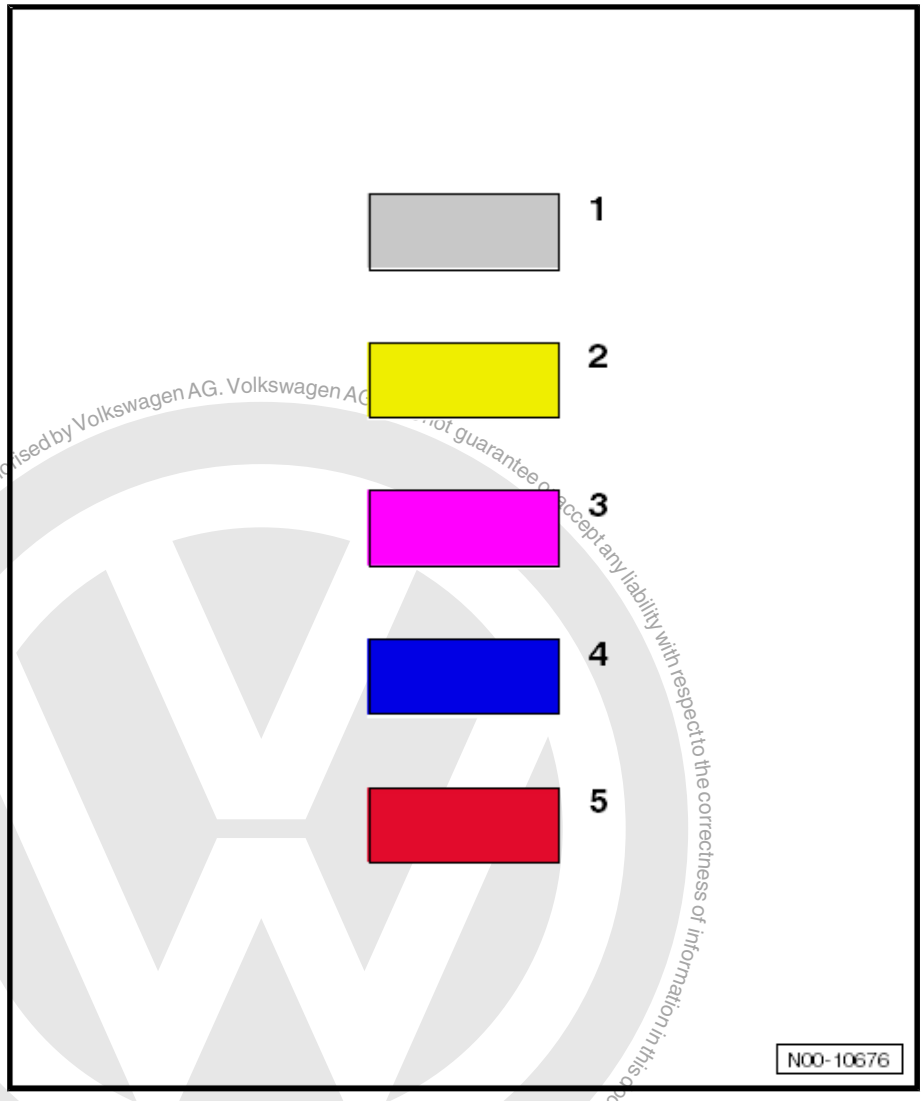
All repairs must be performed according to the manufacturer specifications in the Repair Manual. High-strength and hot-formed steel can be only be repaired with inverter technology for optimum passenger safety after the repair is completed. Body panels, made from hardened steel, are used in areas where there are extreme loads. These body panels, which are light weight, have a much higher strength than conventional high-strength body panels.

General information applies to all work on higher-strength body panels, refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Steel Panel Repairs, Higher-Strength Body Panels .

Vehicle construction is predominantly manufactured from galvanized steel panels.

The steel panels, which are made of high strength to hot formed steel, are shown in color in the following illustrations (see Table).

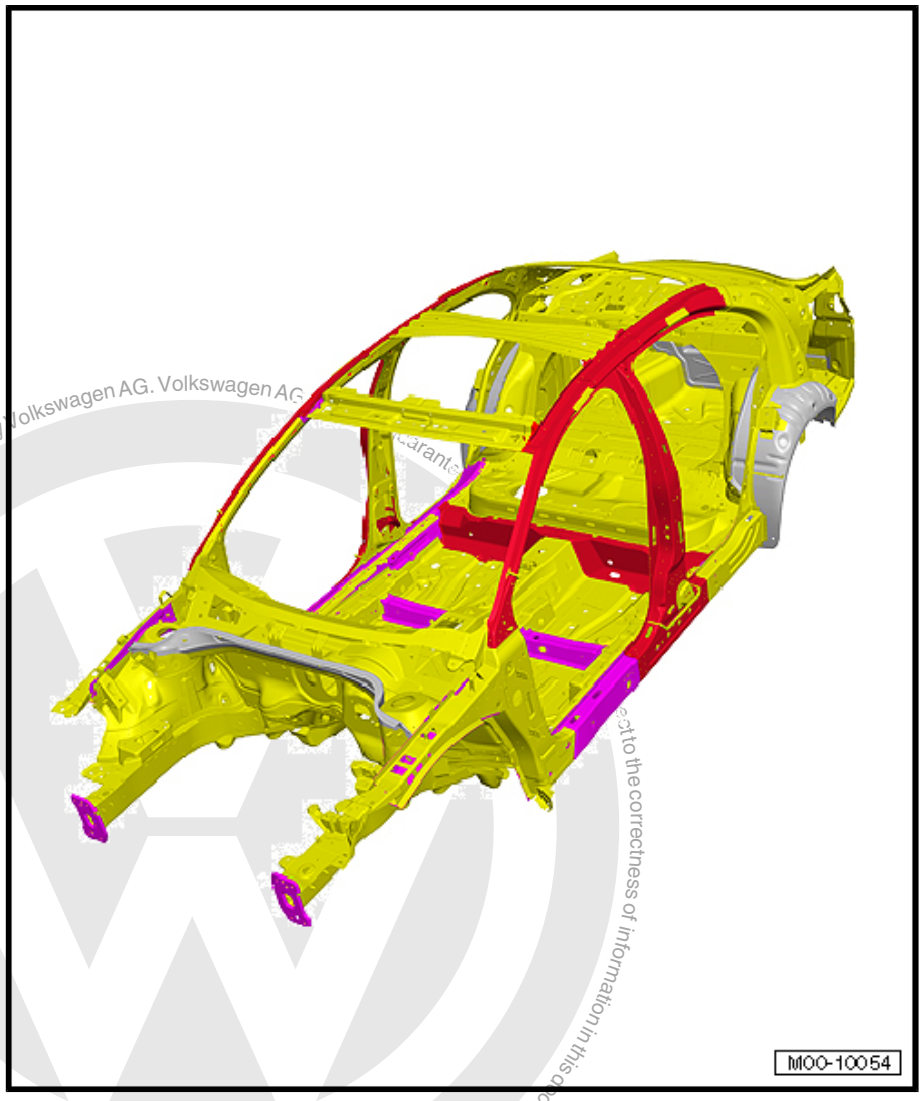
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	Color	Type of Steel	Tensile Strength in Mpa
1	Gray	Soft	< 350
2	Yellow	High-strength	300 - 590
3	Magenta	Modern high-strength	500 - 980
4	Blue	Ultra-high strength	980 - 1150
5	Red	Ultra high-strength hot-formed	Greater than 1400

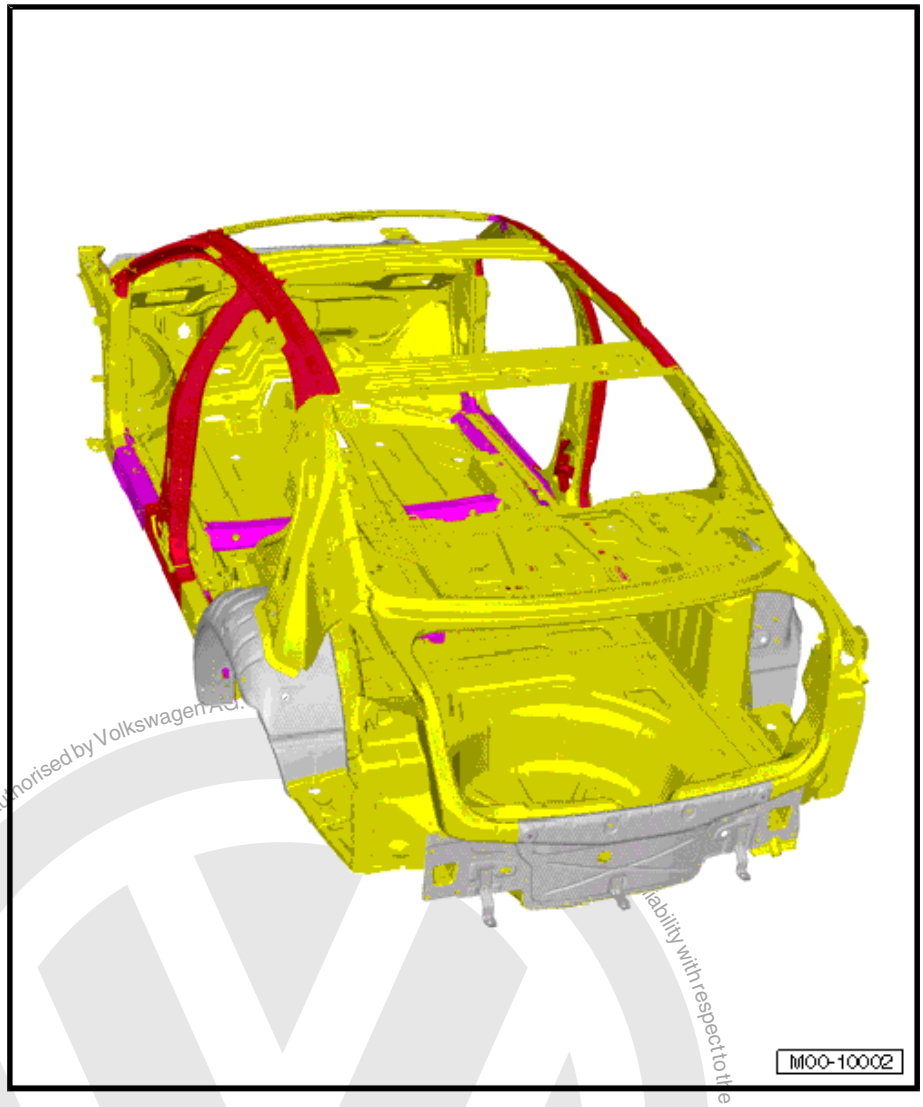
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6.2 Overview - Vehicles



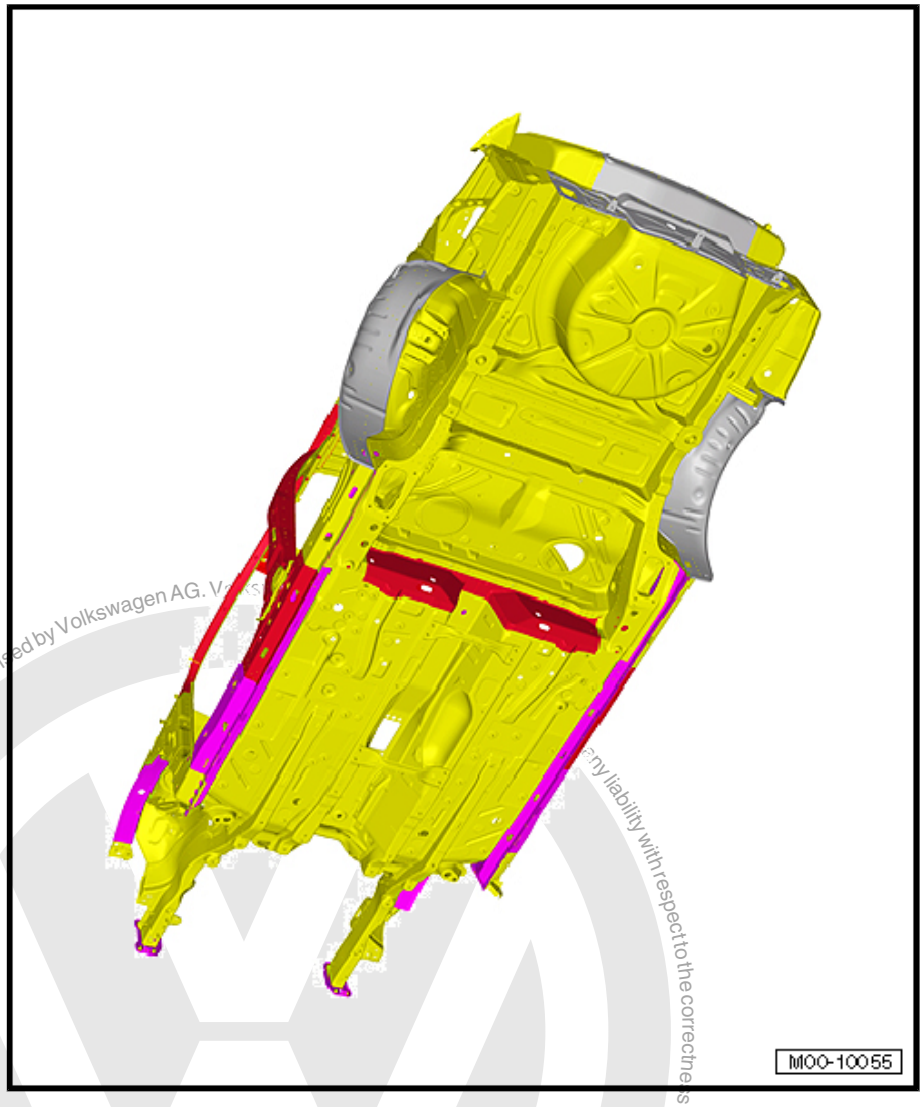
To illustrate the body more clearly, the outer side panel and the roof are not shown in the illustration These body parts are made out of »standard« body steel.

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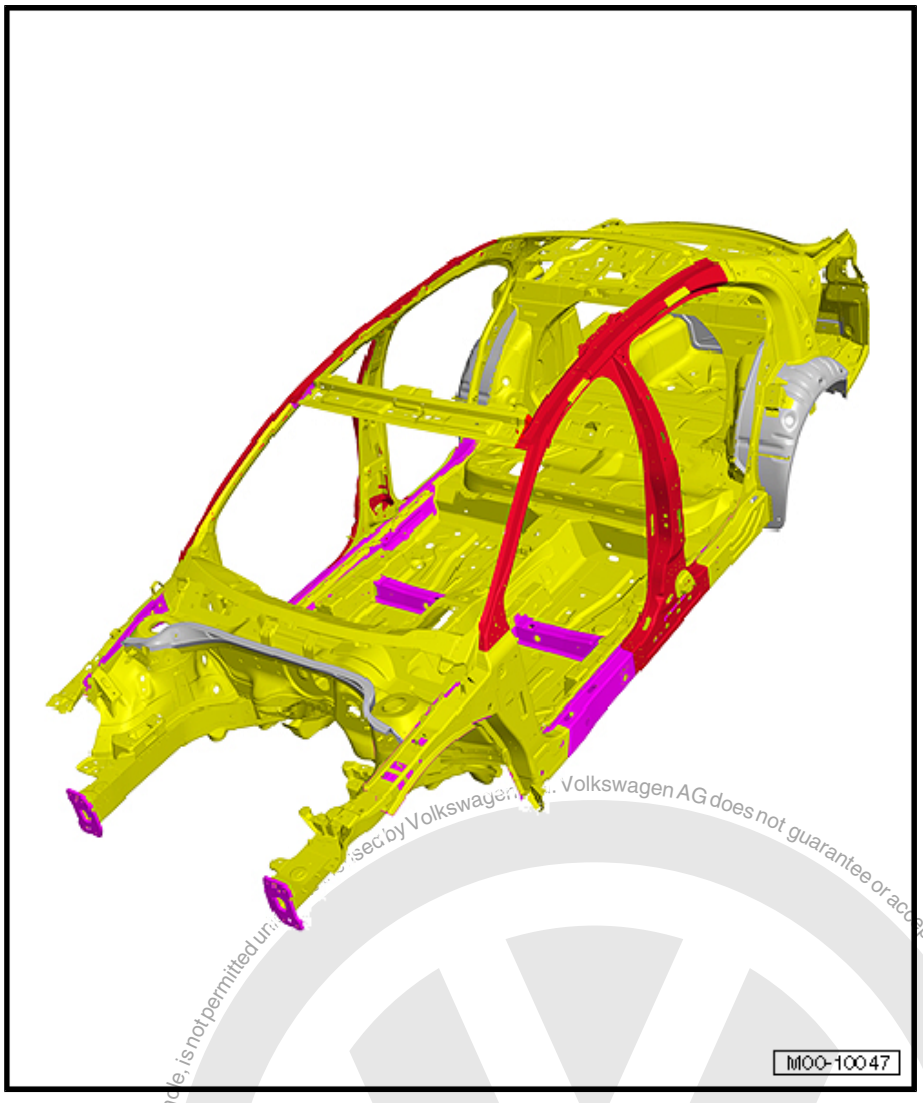
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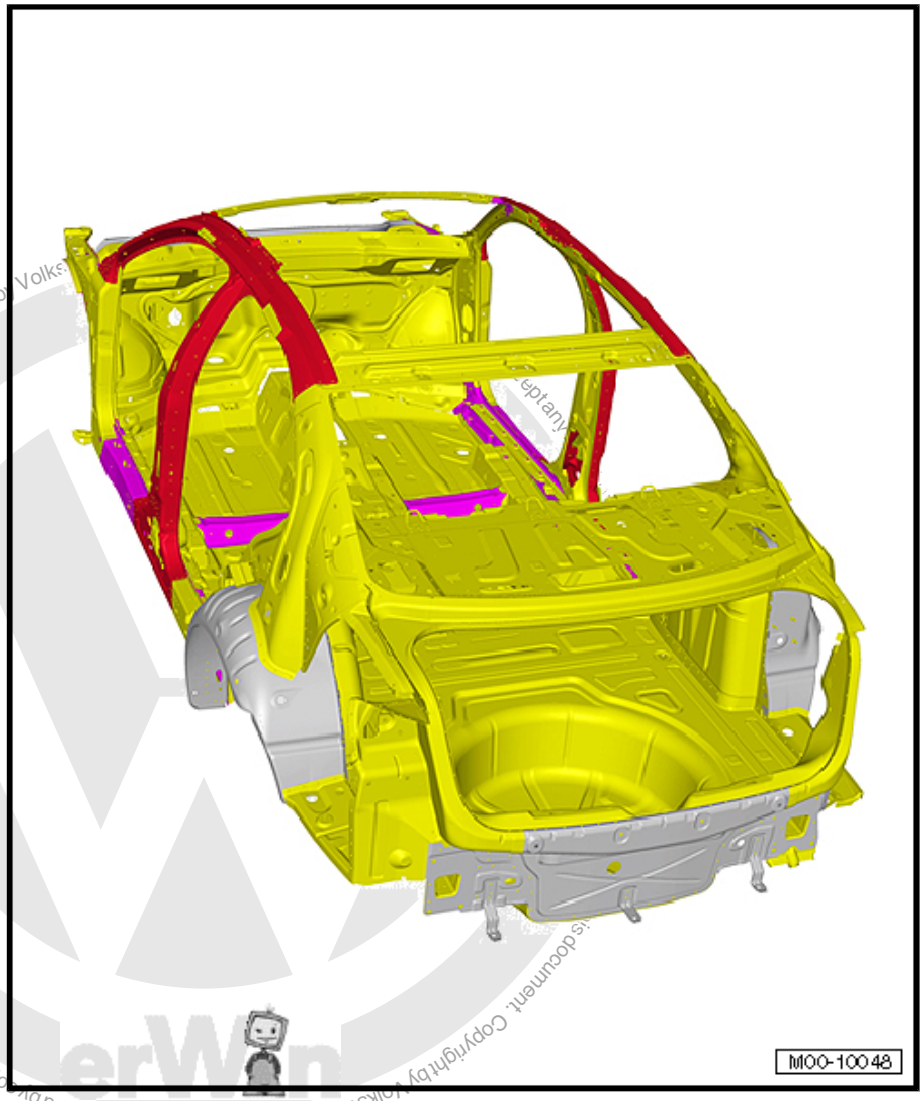
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6.3 Overview - Vehicles, Rest of World



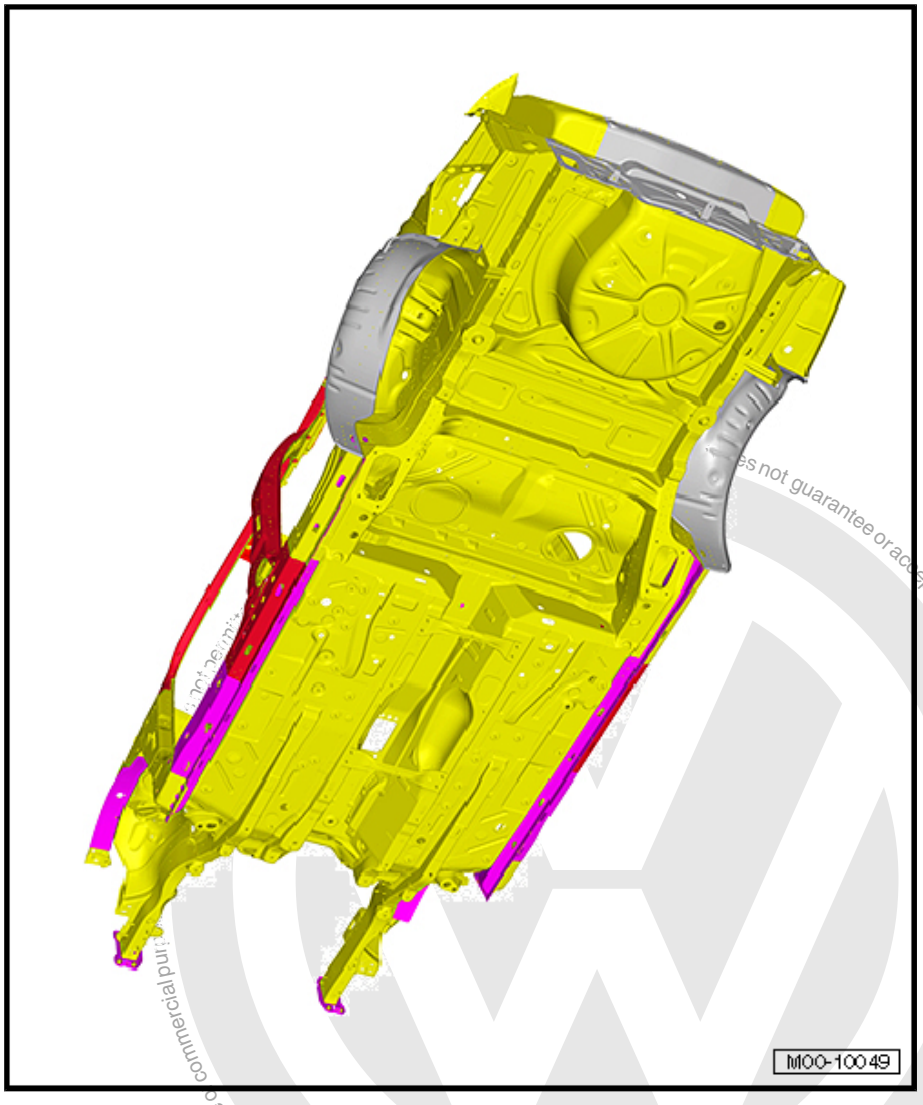
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To illustrate the body more clearly, the outer side panel and the roof are not shown in the illustration These body parts are made out of »standard« body steel.



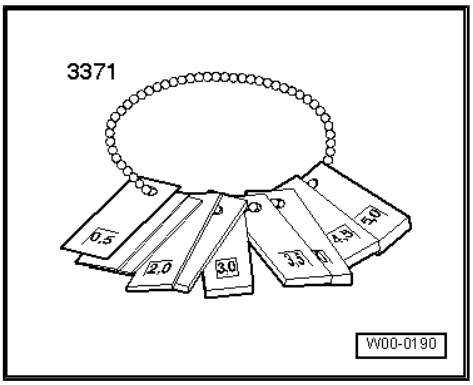
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7 Body Gap Dimensions

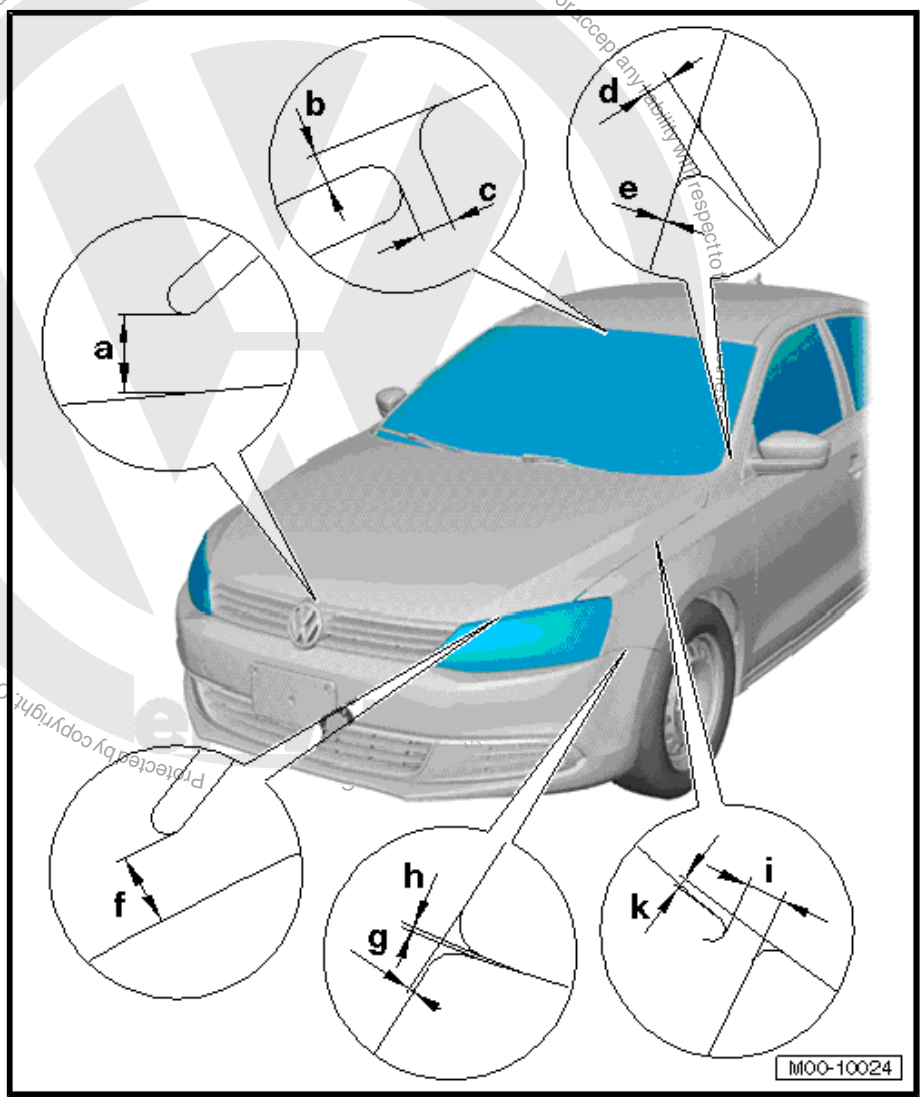
Note

- *Use the Gauge - Gap Adjustment - 3371- to adjust or check.*
- *Panel gaps are always indicated in mm.*



7.1 Body Front

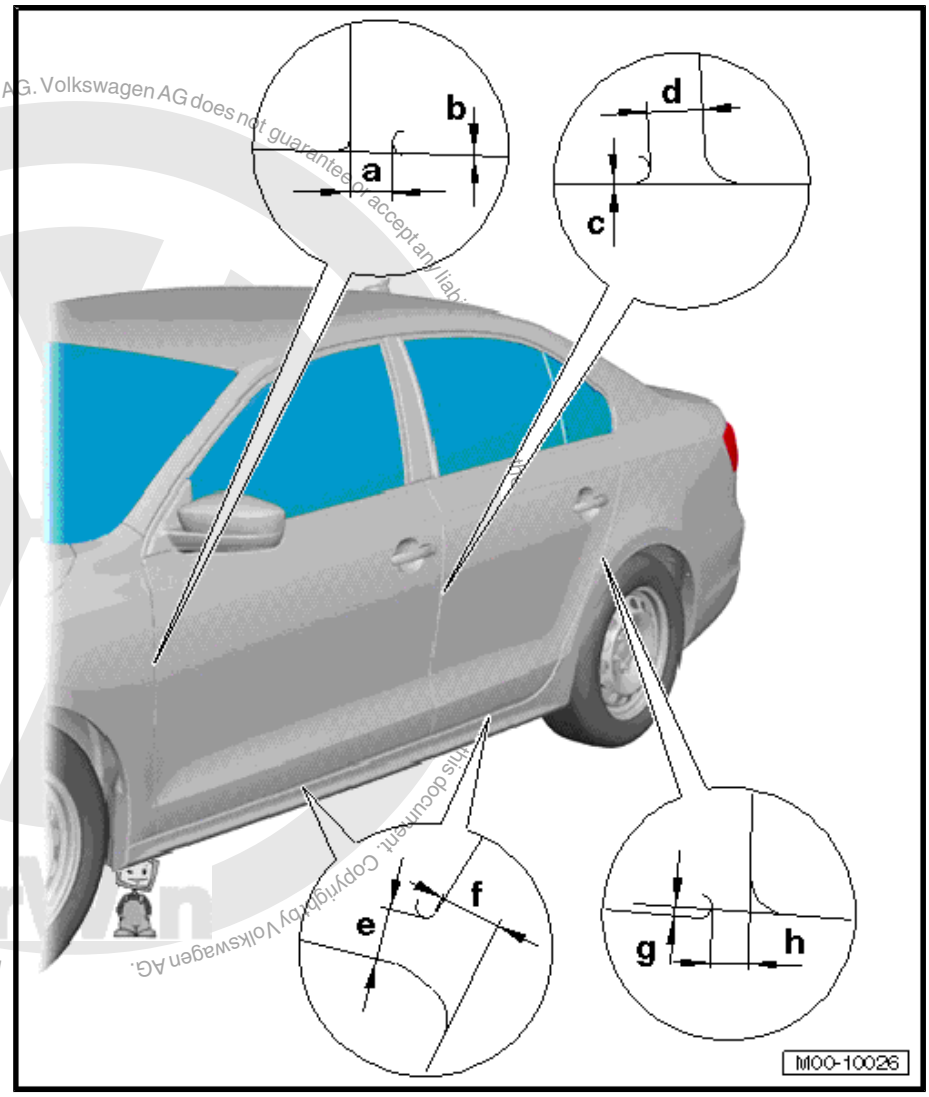
a - 5.0 mm ± 0.5 mm
b - – 1.9 mm ± 0.5 mm
c - 2.5 mm ± 0.5 mm
d - 2.0 mm ± 1.0 mm
e - 0.0 mm ± 0.5 mm
f - 4.9 mm ± 0.5 mm
g - – 0.5 mm ± 0.5 mm
h - 0.5 mm ± 0.5 mm
i - 3.2 mm ± 1.5 mm
k - – 0.5 through + 1.6 mm ± 0.5 mm



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7.2 Body, Center

a - 3.5 mm ± 0.5 mm
b - 0.0 mm ± 0.8 mm
c - 0.0 mm + 1.0 mm
d - 4.2 mm ± 0.5 mm
e - 4.5 mm ± 0.5 mm
f - – 5.1 mm ± 0.5 mm
g - 0.8 mm + 1.0 mm
h - 3.5 mm ± 0.5 mm



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7.3 Body, Rear

a - 1.0 mm ± 0.5 mm

b - – 0.5 mm ± 0.5 mm

c - 3.7 mm ± 0.5 mm

d - 0.0 through 0.5 mm ± 0.5 mm

e - – 2.0 mm ± 0.5 mm

f - 2.5 mm ± 0.5 mm

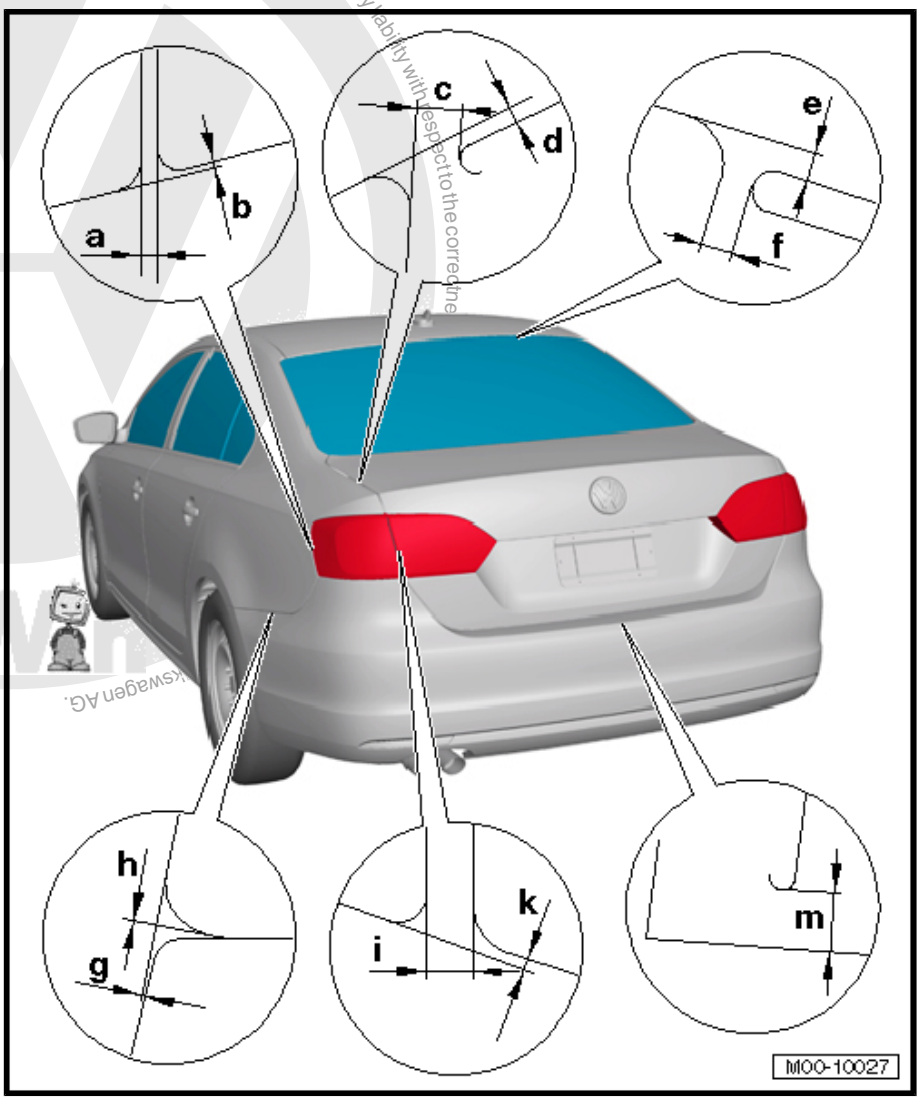
g - 0.5 mm ± 0.5 mm

h - 0.0 mm + 0.5 mm

i - 3.5 mm ± 0.5 mm

k - – 0.8 mm + 0.5 mm

m - 5.0 mm ± 0.5 mm

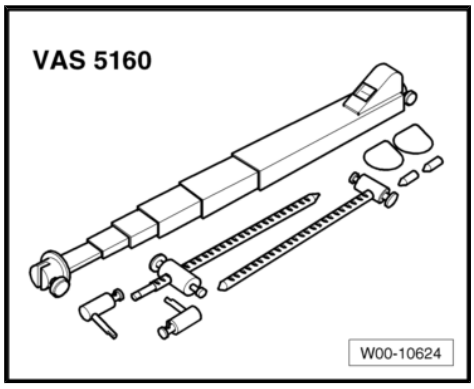


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8 Body Panel Dimensions

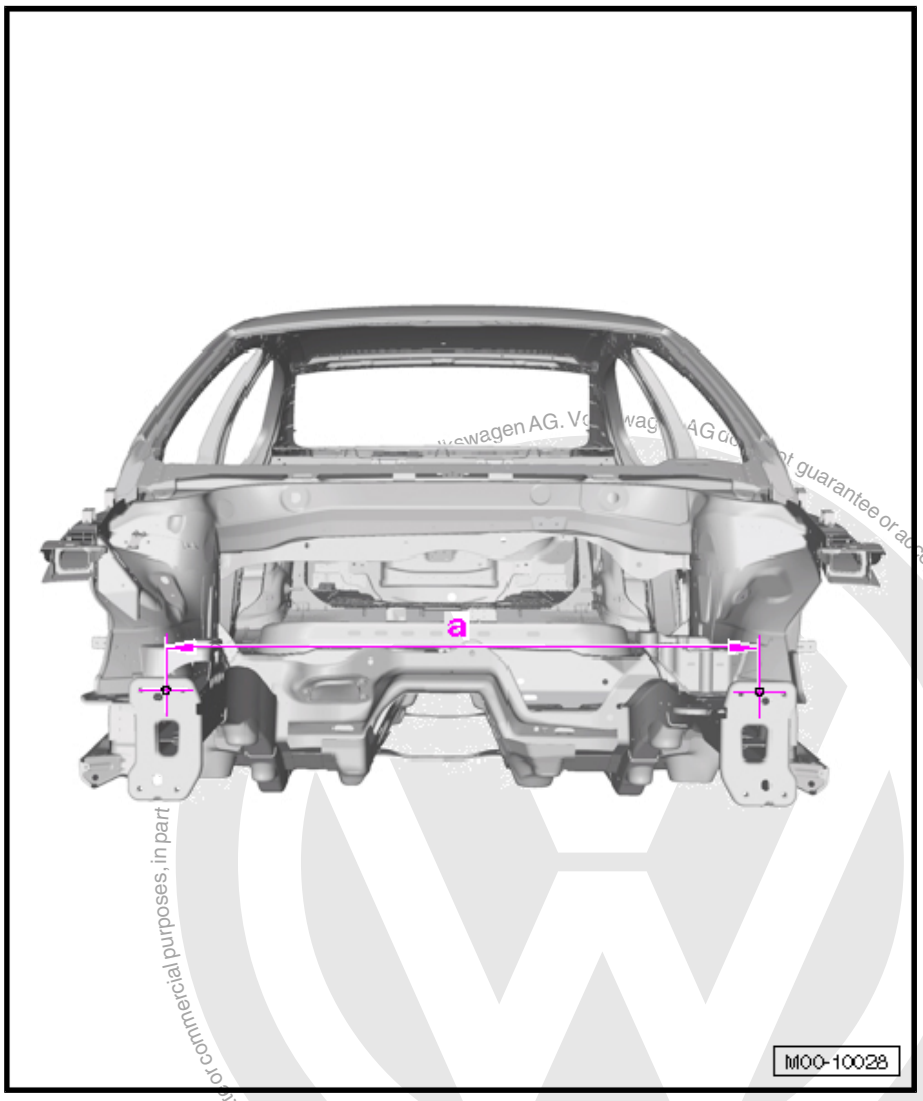
Note

- *The body dimensions serve only for inspection. The Straightening Bracket Set - Jetta 2011 - VAS6638- and the Portal Gauge - Audi A6/A7 - VAS5007/52- are standard.*
- *Bolts, plugs, trim and attachments must be removed before the measuring procedure.*
- *Use the Telescoping Gauge - VAS5159- or the Telescoping Measuring Device - VAS5160- to determine the body dimensions.*
- *Make sure that the test probes are always the same length to avoid inaccuracy when measuring.*



8.1 Body Front

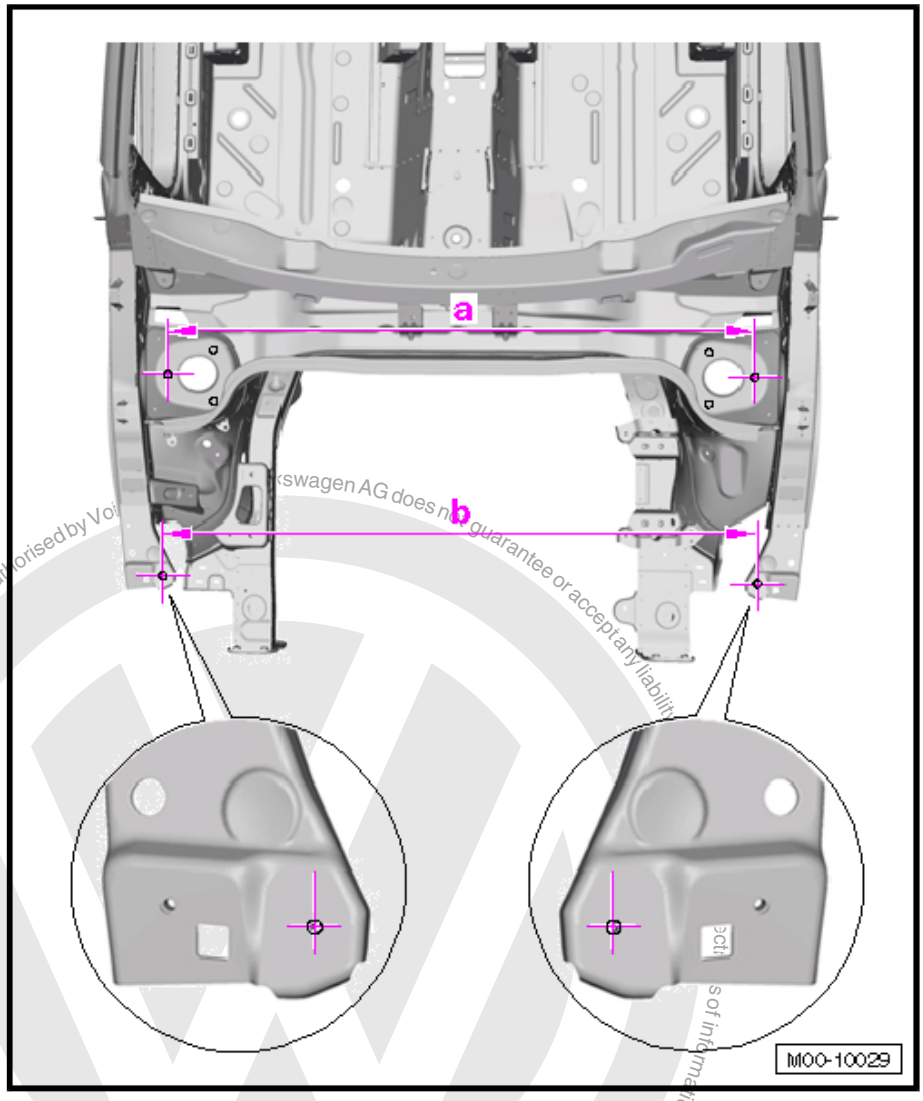
a - 964 mm ± 2.0 mm



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a - 1255 mm ± 2.0 mm

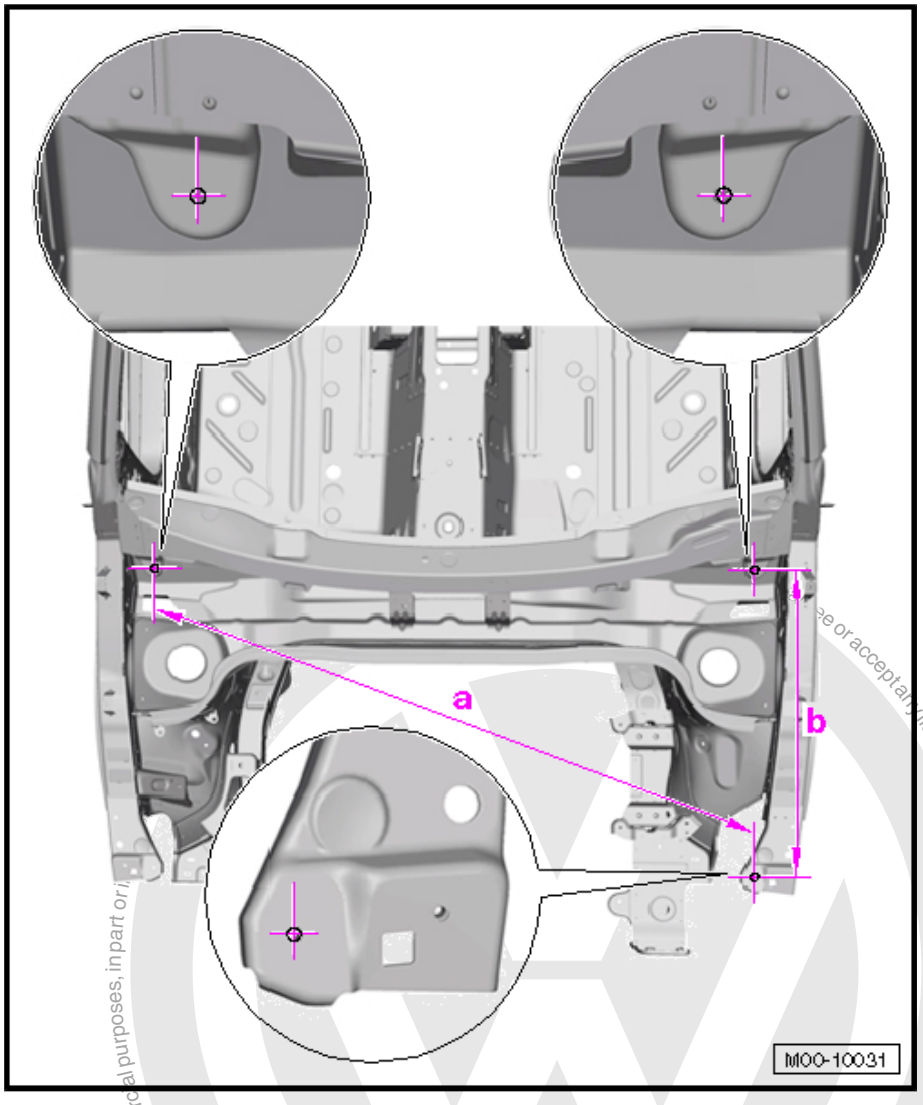
b - 1283 mm ± 2.0 mm



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a - 1431 mm ± 2.0 mm

b - 652 mm ± 2.0 mm

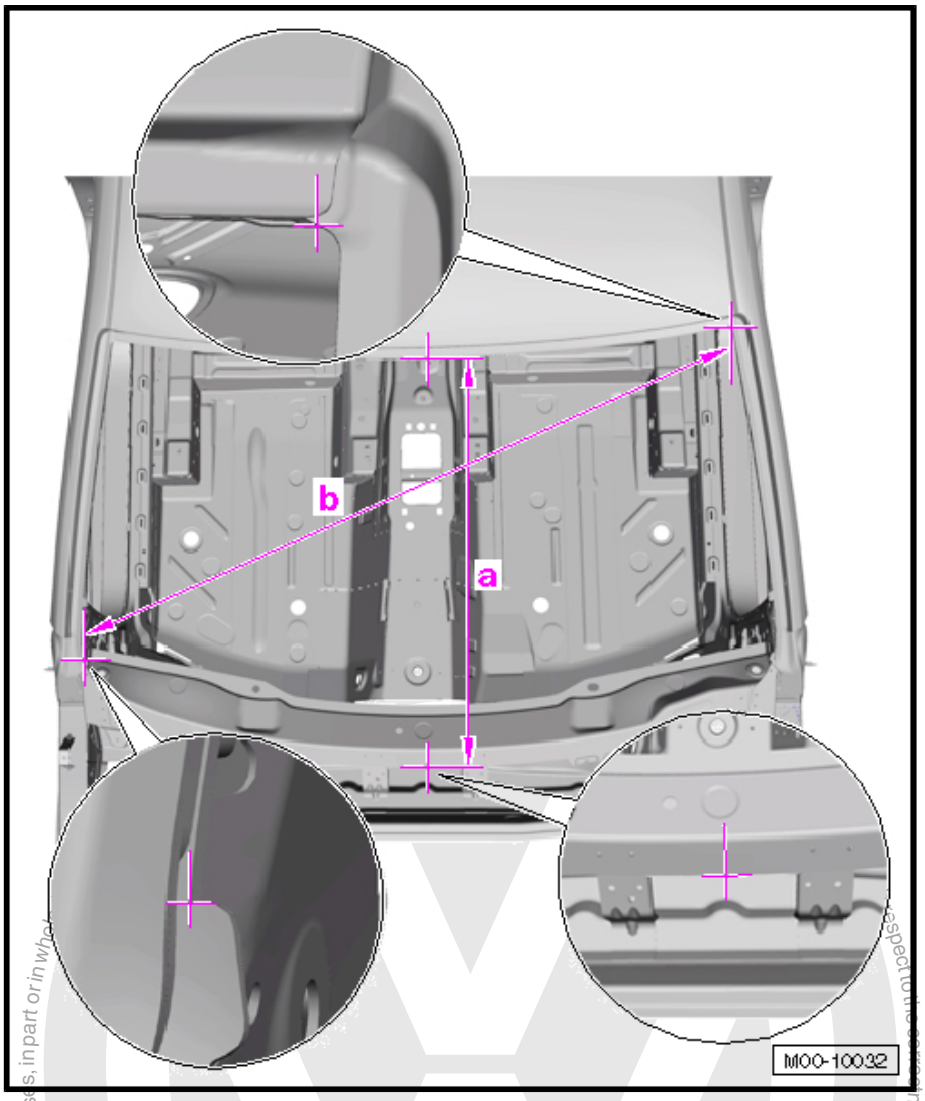


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8.2 Body, Center

a - 837 mm ± 2.0 mm

b - 1412 mm ± 2.0 mm

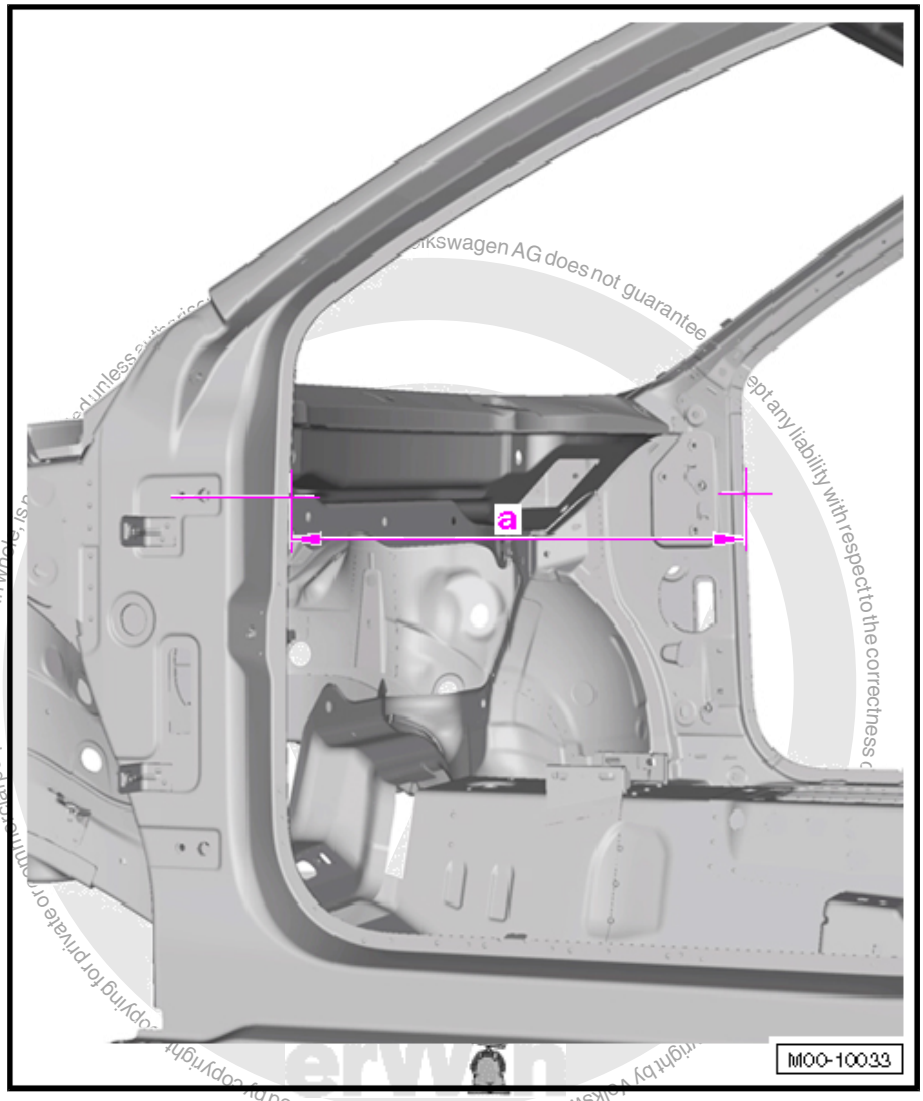


Note

Is measured on inner side of body flange.

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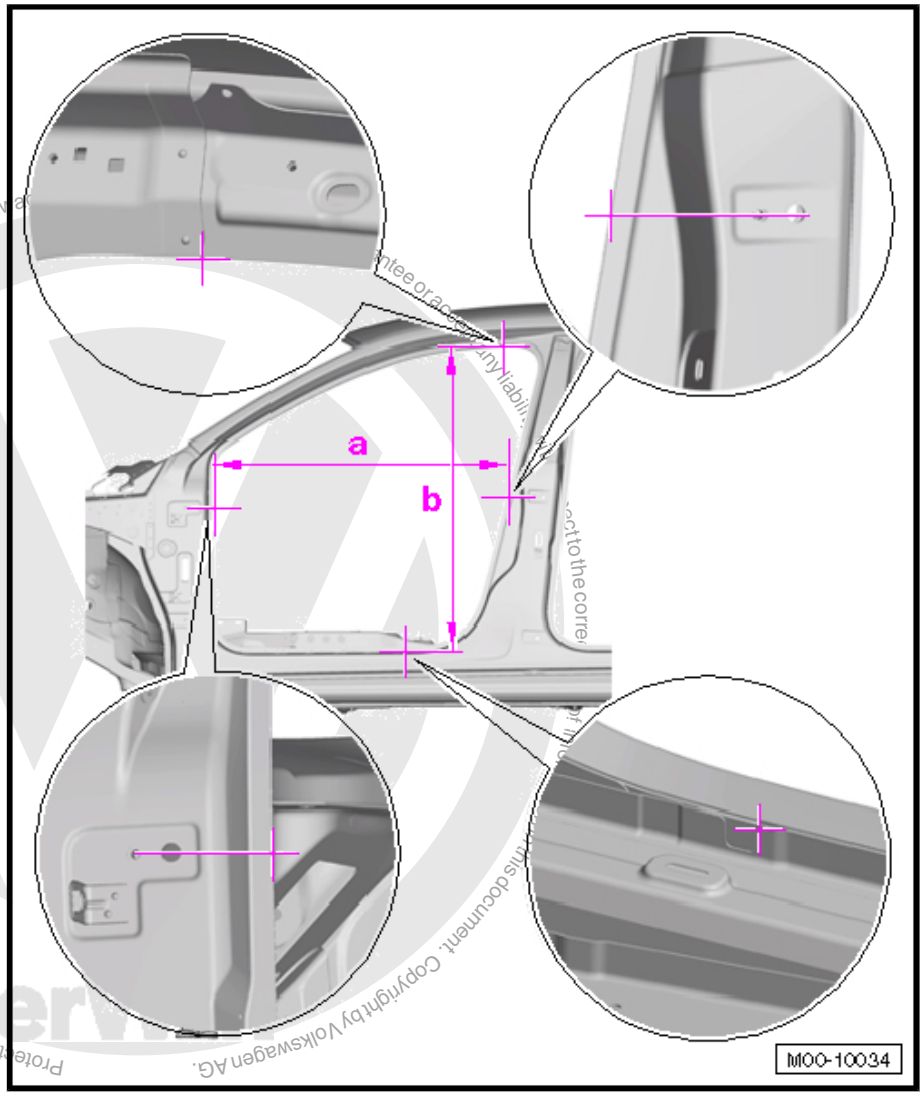
a - 1417 mm ± 2.0 mm



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a - 915 mm ± 2.0 mm

b - 982 mm ± 2.0 mm

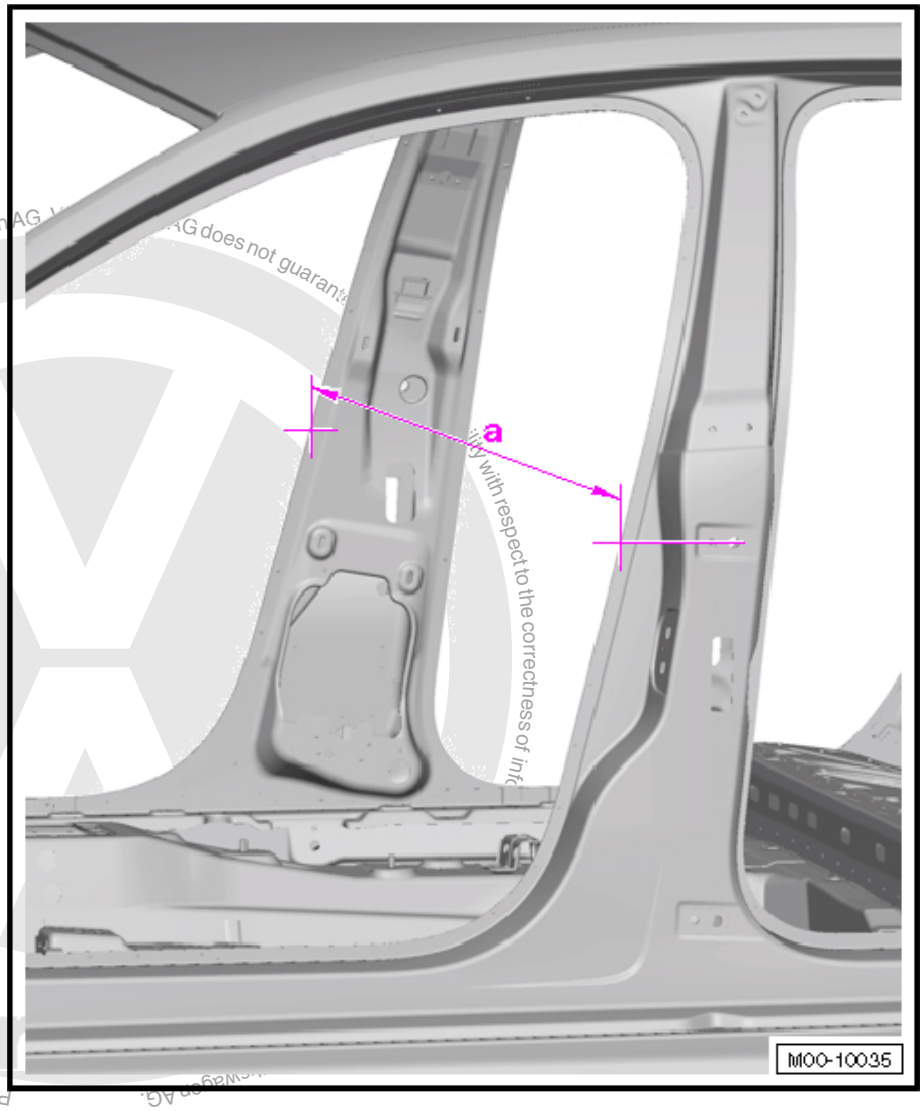


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Note

Is measured on inner side of body flange.

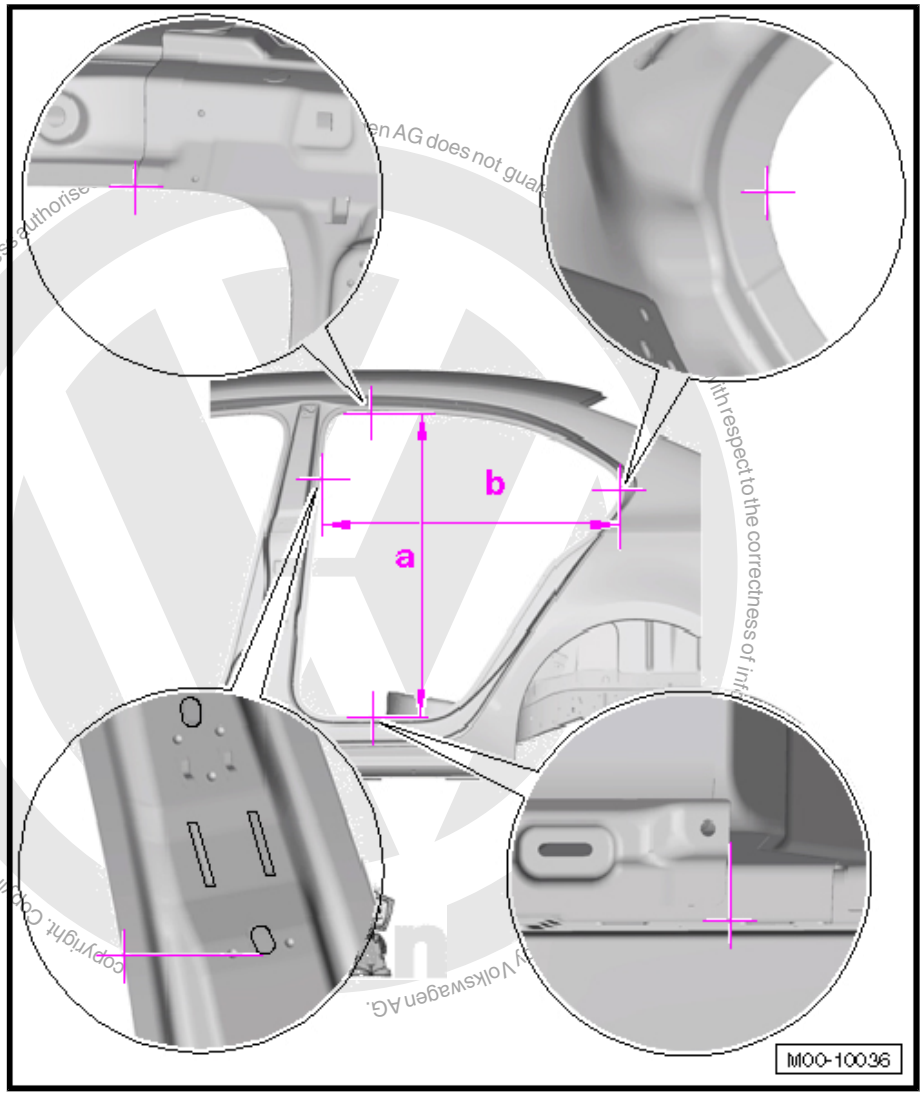
a - 1418 mm ± 2.0 mm



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a - 959 mm ± 2.0 mm

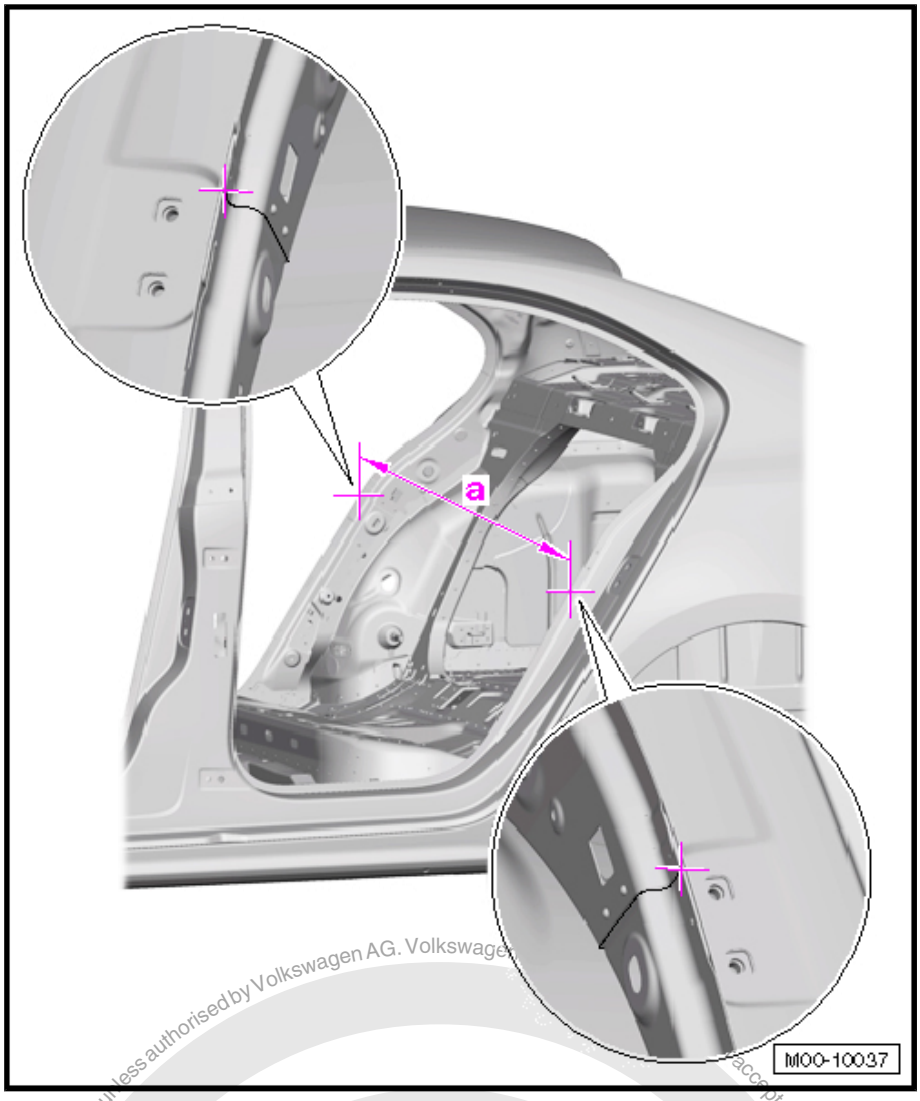
b - 926 mm ± 2.0 mm



Note

Is measured on inner side of body flange.

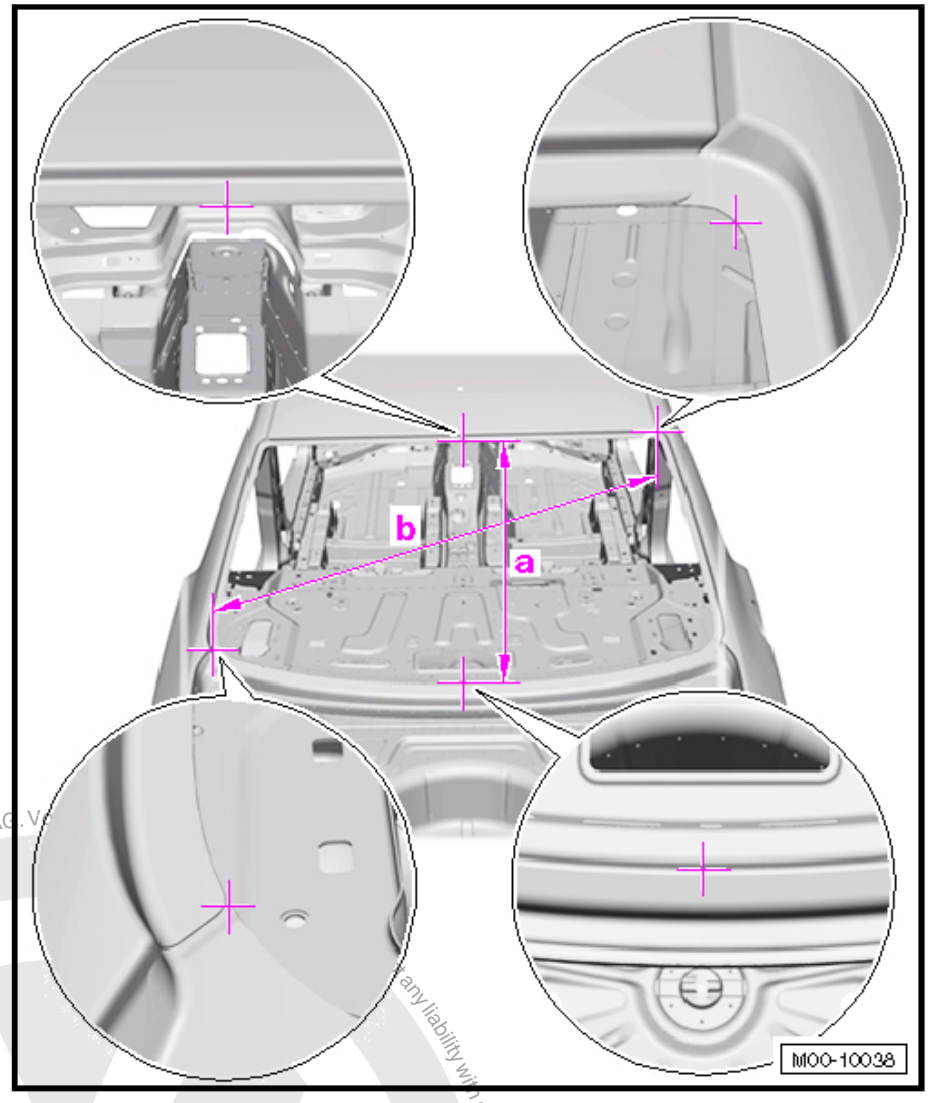
a - 1426 mm ± 2.0 mm



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a - 730 mm ± 2.0 mm

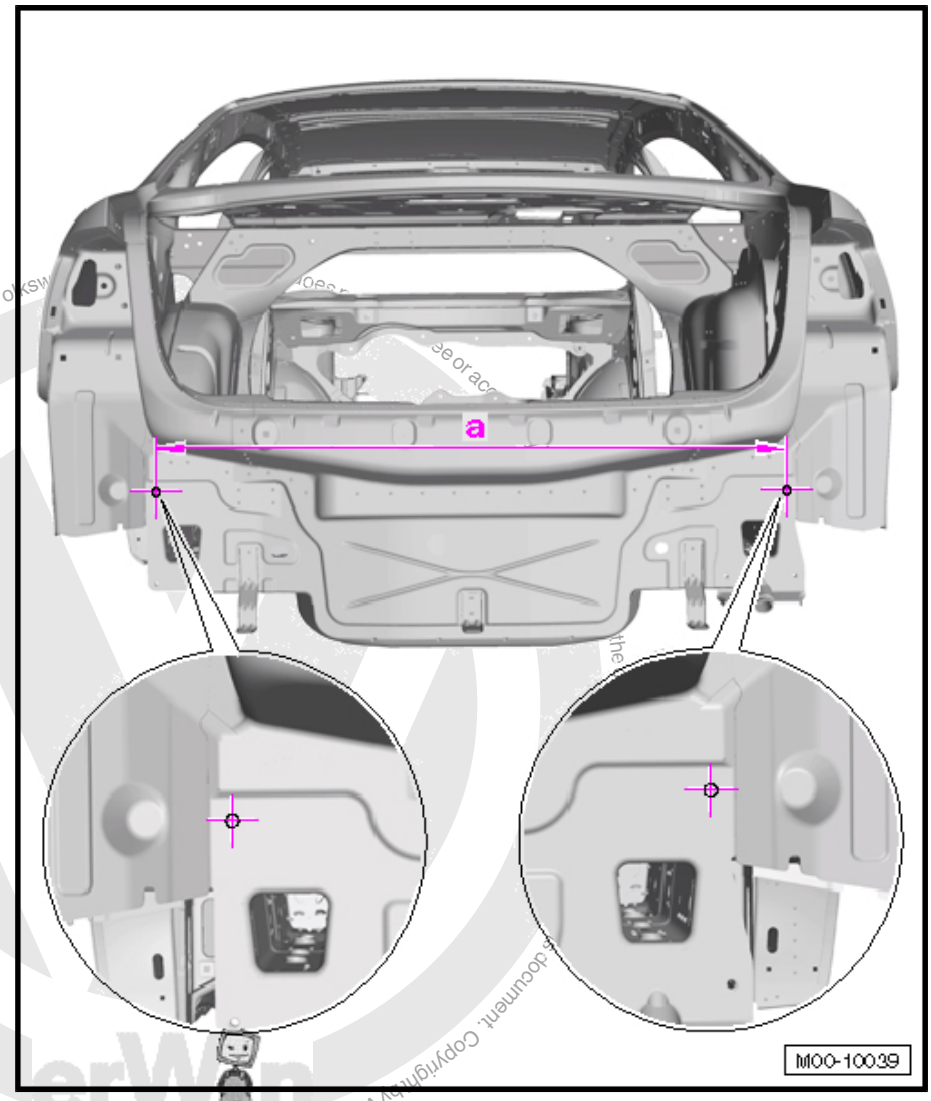
b - 1287 mm ± 2.0 mm



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8.3 Body, Rear

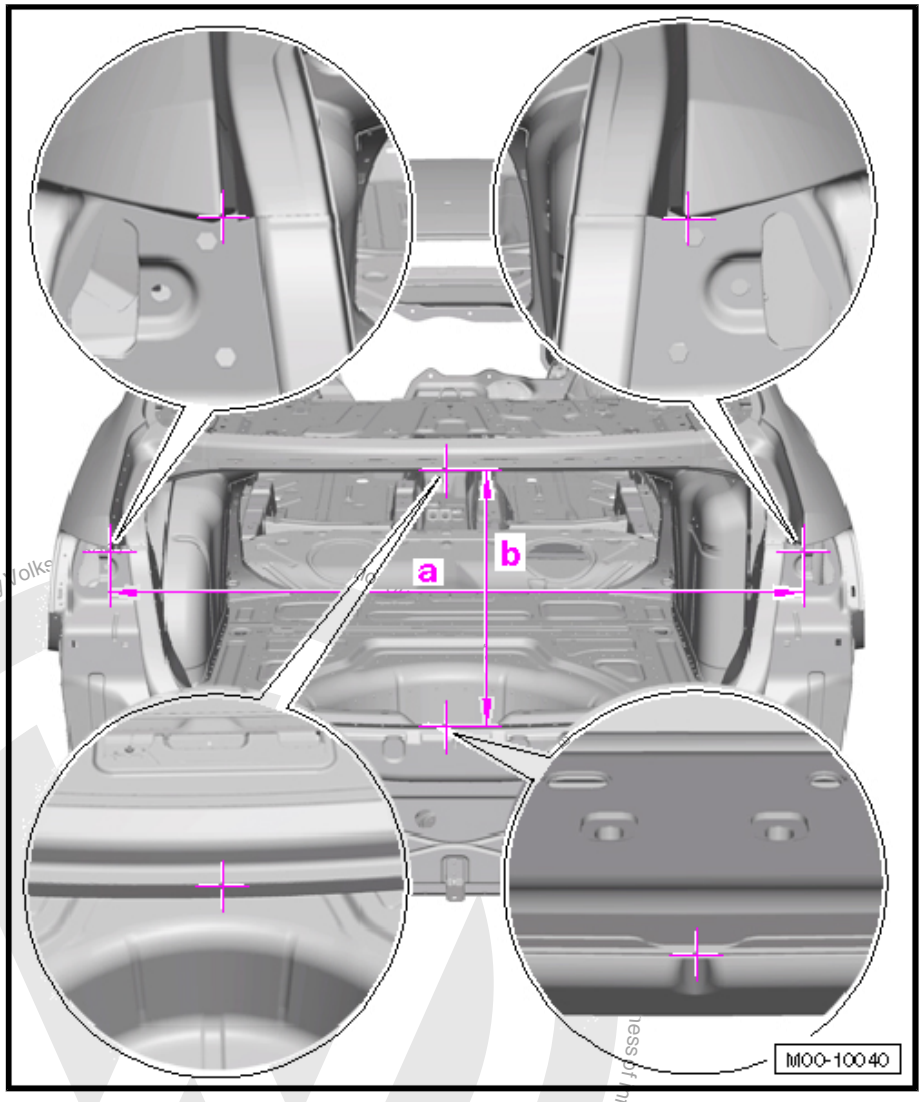
a - 1073 mm ± 2.0 mm



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a - 1190 mm ± 2.0 mm

b - 497 mm ± 2.0 mm

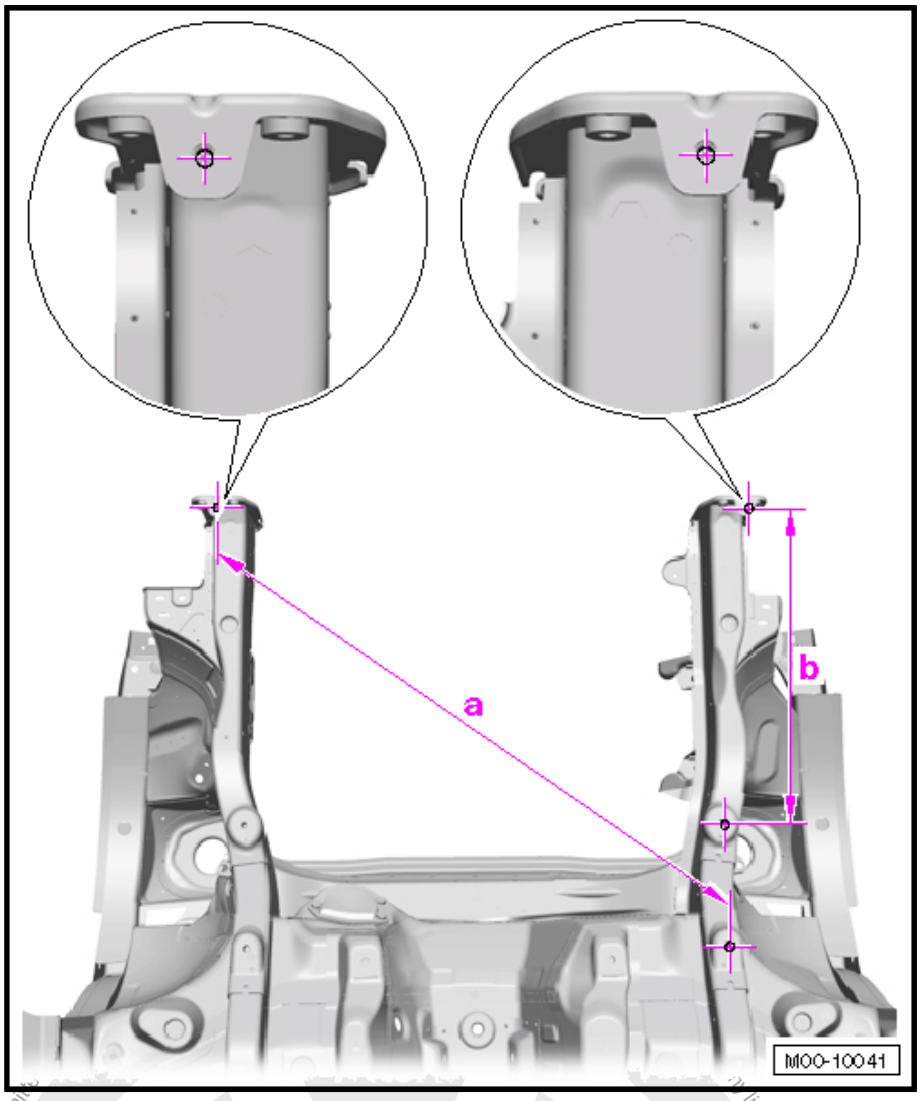


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8.4 Front Floor Assembly

a - 1241 mm ± 2.0 mm

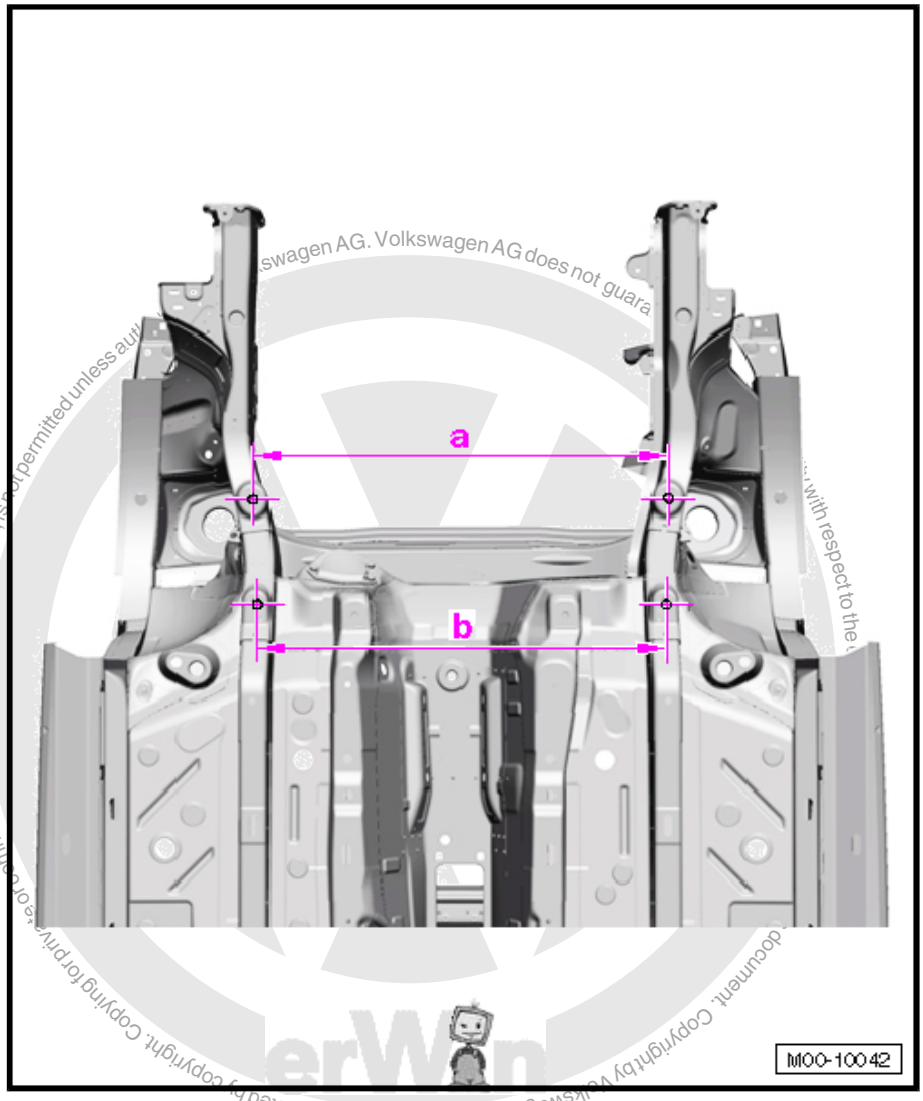
b - 607 mm ± 2.0 mm



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a - 874 mm ± 2.0 mm

b - 835 mm ± 2.0 mm



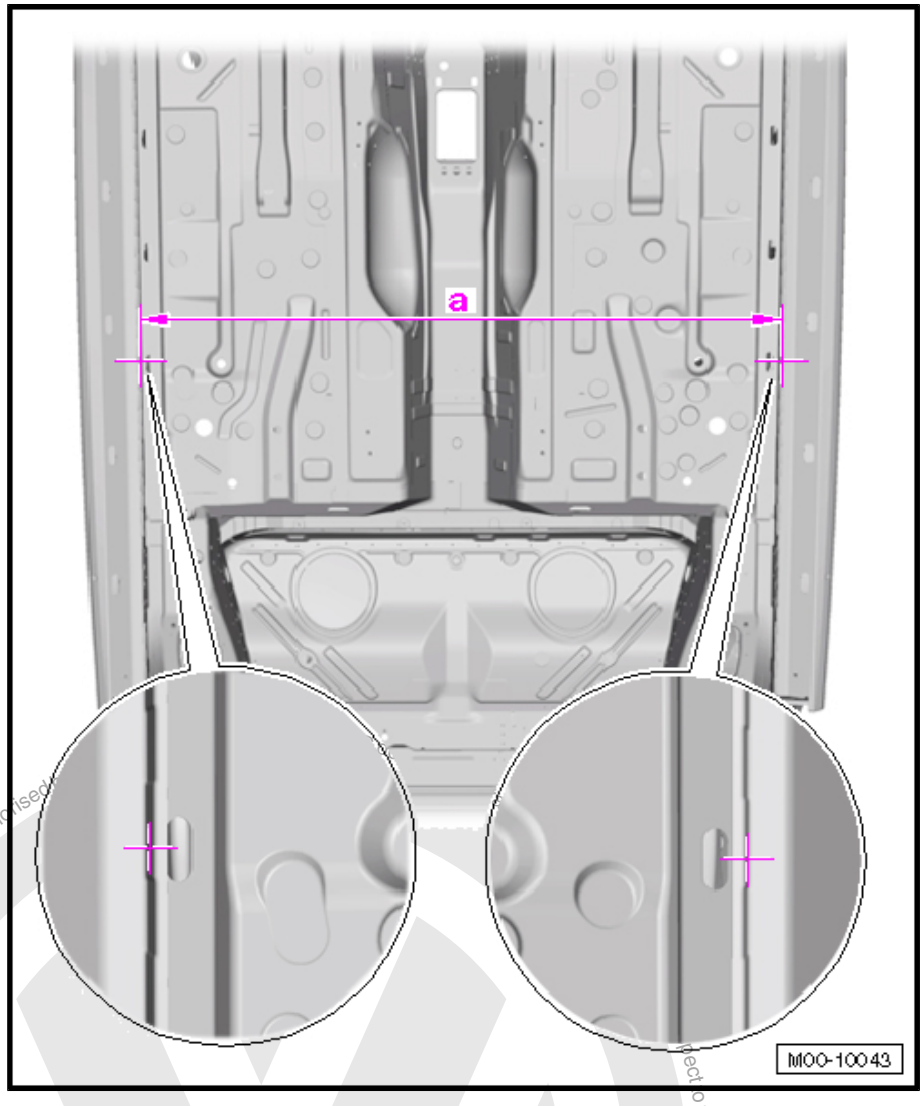
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8.5 Center Floor Assembly

Note

It is measured on the outside of the body flange in the B-pillar height.

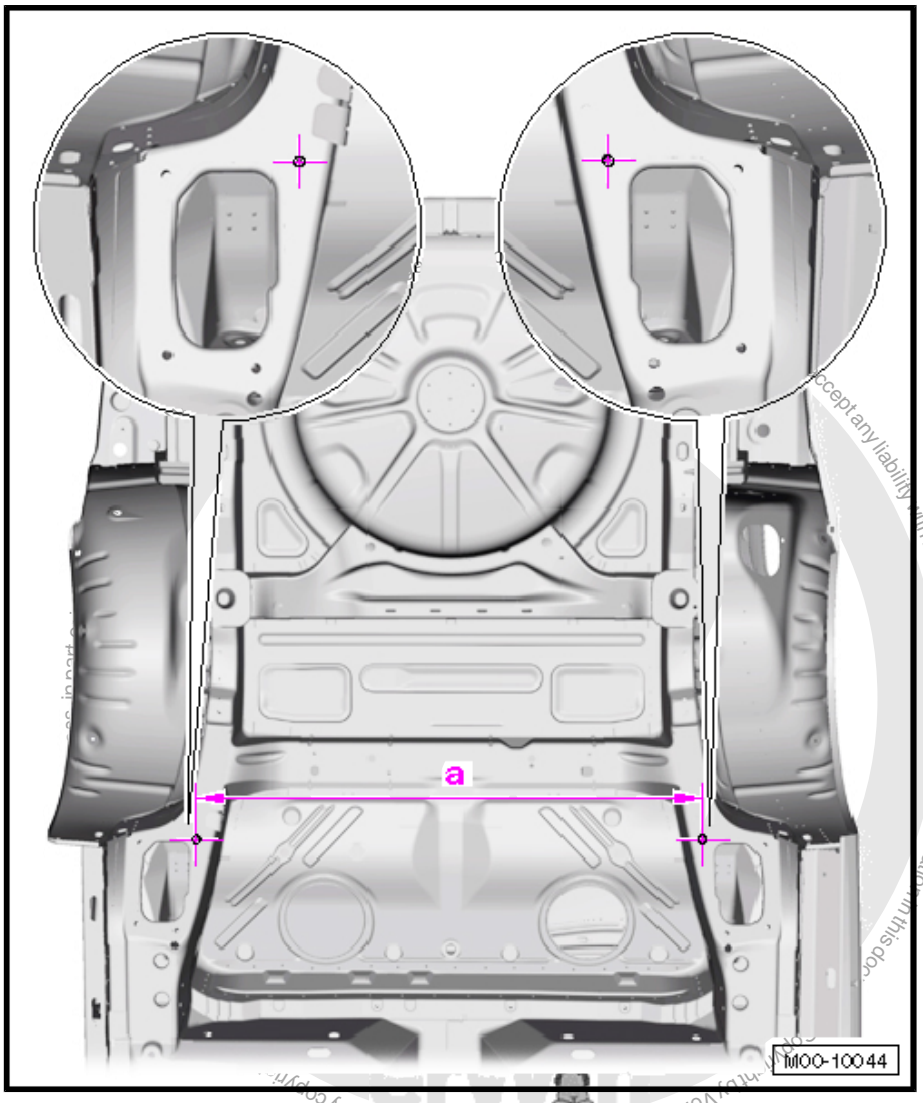
a - 1464 mm ± 2.0 mm



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8.6 Rear Floor Assembly

a - 1075 mm ± 2.0 mm

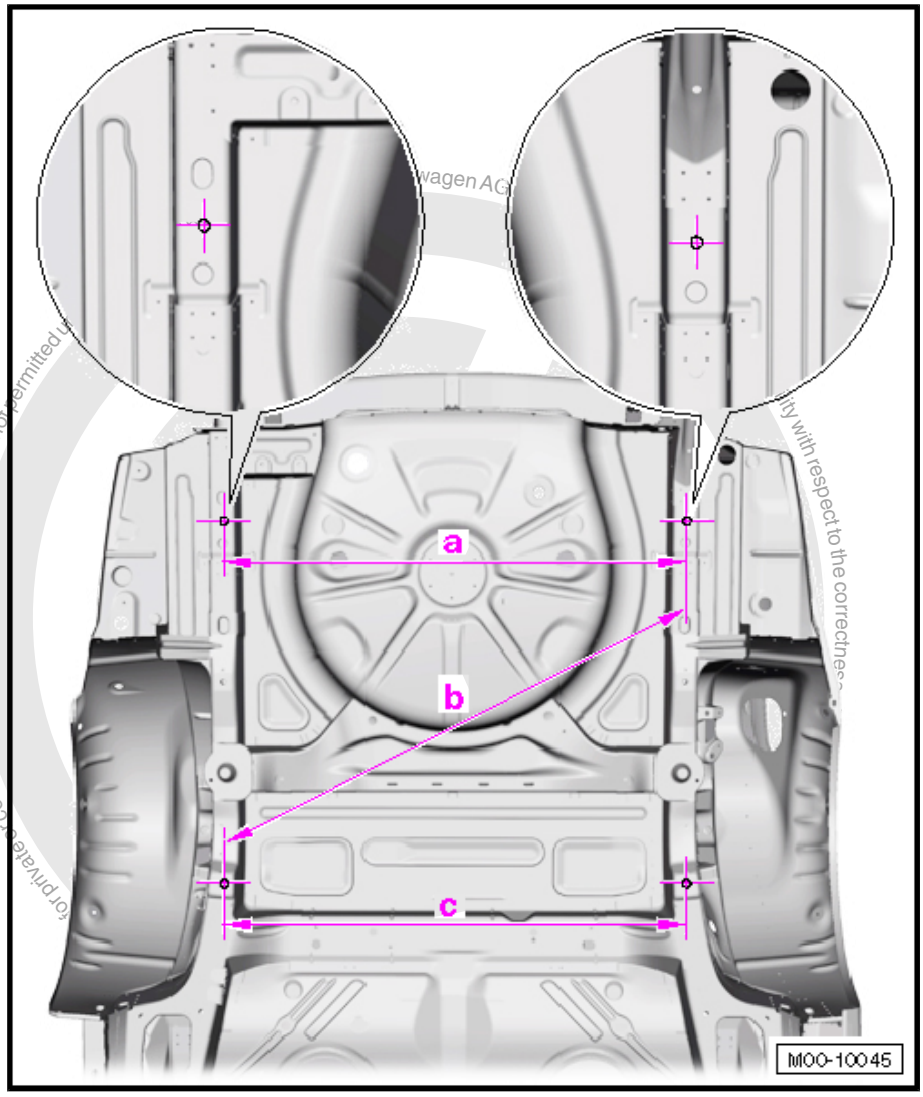


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a - 987 mm ± 2.0 mm

b - 1261 mm ± 2.0 mm

c - 1000 mm ± 2.0 mm



9 Contoured Surface

The edges and recesses on a contoured surface conform to specific dimensions.

It is Specified When:

- Any surfaces or parts that have been worked on by the technician, such as removing dents, welding or spackling, must be sanded with minimum P 80 grit sandpaper.
- The vehicle paintshop must then paint the surface in maximum two steps.

For the contoured surfaces, the steel spatula

2K Steel Scraper Set - DA 787 300 A2 -

Be Used.

WARNING

Leaded soldering tin may not be used since 01/01/2003.

Note

Volkswagen AG does not approve of a procedure using lead-free soldering tin.

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10 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

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11 Alignment Bracket Set

Note

Use a Alignment Bracket Set or Measuring and Alignment System approved by Volkswagen AG to perform any aligning work.

11.1 Overview

Special tools and workshop equipment required

- Straightening Bracket Set - Jetta 2011 - VAS6638-
- Mz Plus Straightening Bracket System - VAS6630-

Note

- *The Straightening Bracket Set - Jetta 2011 - VAS6638- can only be used with the Mz Plus Straightening Bracket System - VAS6630- .*
- *Refer to assembly plan supplied with alignment bracket set for detailed information on the assembly.*

11.2 Procedure for Body Structure Damage, Volkswagen AG Vehicles

- The vehicle must be placed on an Volkswagen approved alignment system and a vehicle alignment must be performed if there is visible damage to the body structure or if the body dimensions are different than those stated in the repair manual and/or if damage to the body structure is suspected.

Body Structure Damage Includes:

Damage (dents, cracks, buckling) and/or if the position of a structural part on the vehicle body has changed.

Structural body parts can include all body parts including outer panel parts or parts that are bolted on.

The vehicle must be serviced according to the repair manual if there are dimensional differences.

Note

Refer to assembly plan supplied with alignment bracket set for detailed information on the assembly.

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12 Portal Gauge

Special tools and workshop equipment required

- Portal Gauge - VAS5007-
- Portal Gauge - Audi A6/A7 - VAS5007/52-

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50 – Body Front

RO: 50 40 55 50

1 Right Bracket, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1.1 Tools

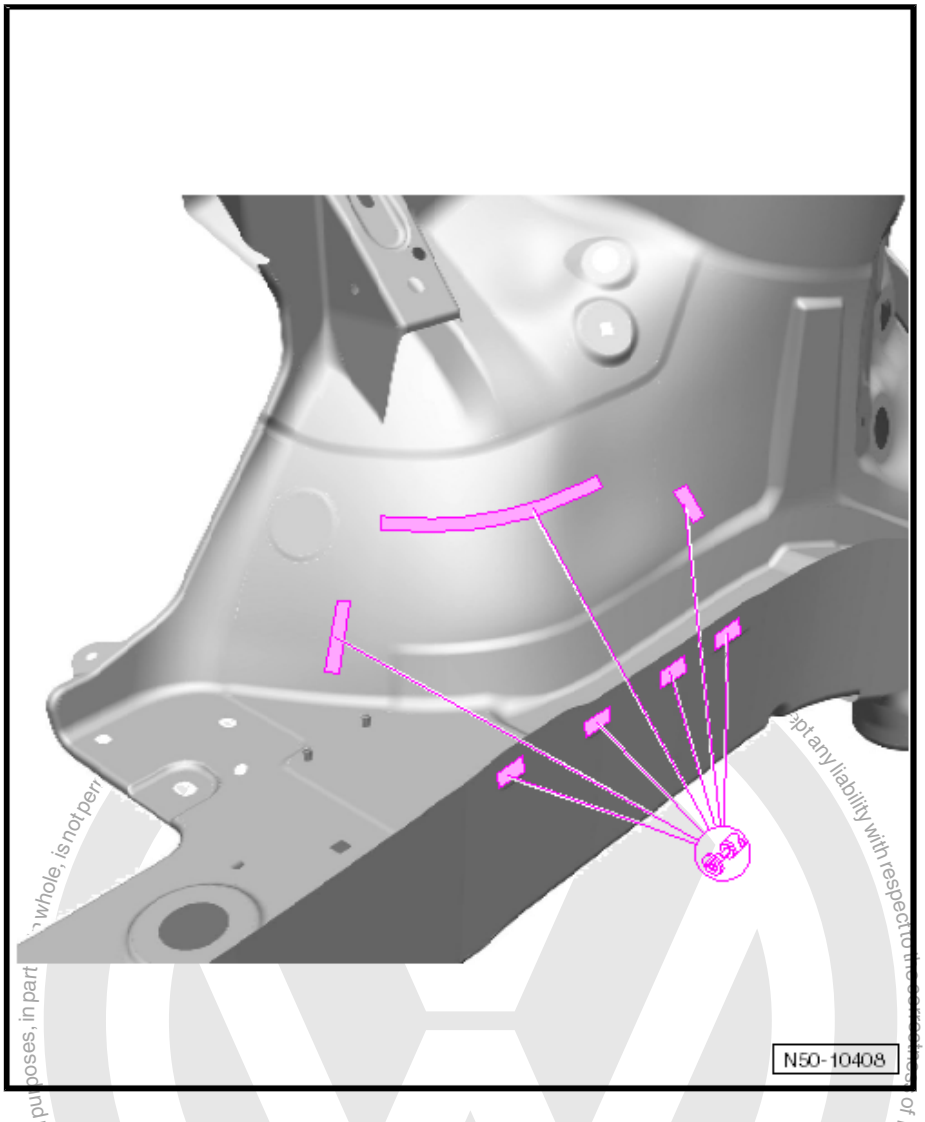
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

1.2 Removing

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– Remove residual material.

1.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ “1.1 Tools”, page 41 .

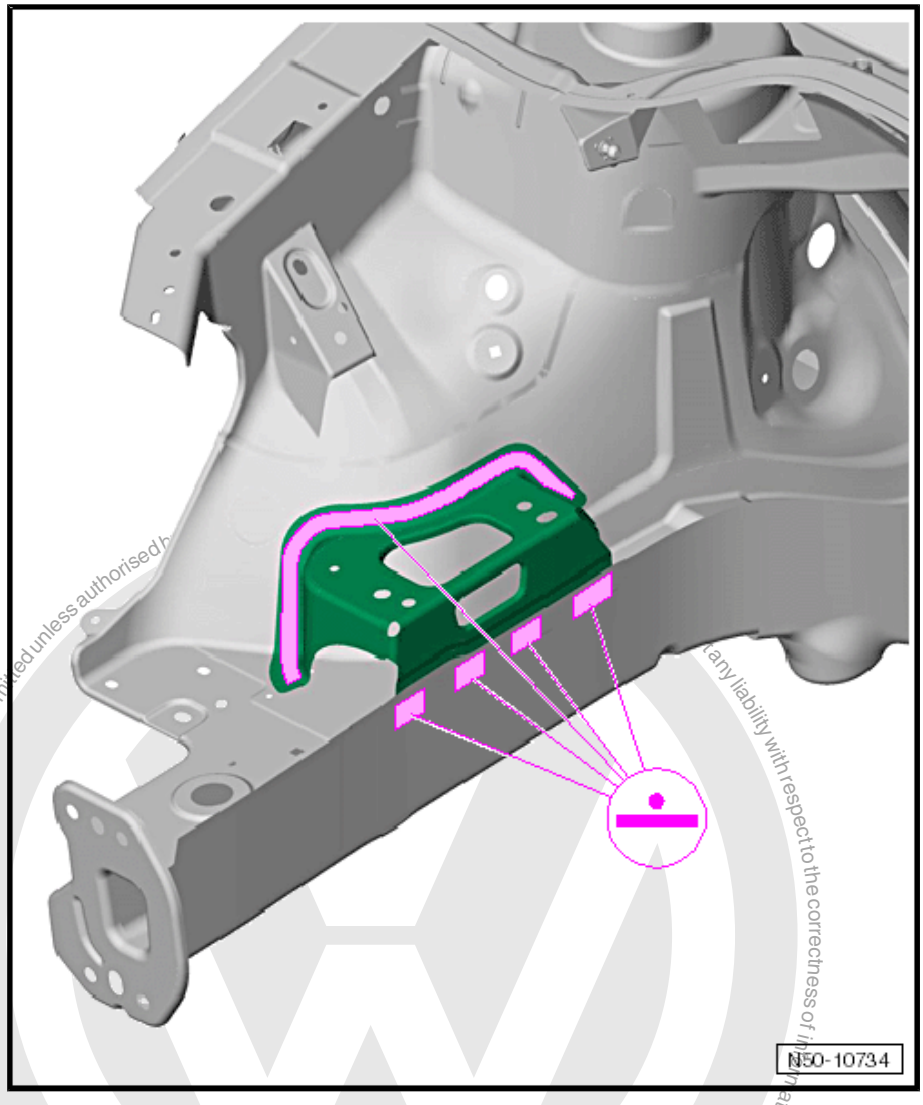
1.3.1 Welding

New Part

♦ Right bracket

– Fit new part to vehicle standing on Alignment Bracket Set and secure.

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– Weld in console, Straight-line spot weld seam.

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RO: 50 40 55 56

2 Left Bracket, Replacing

WARNING

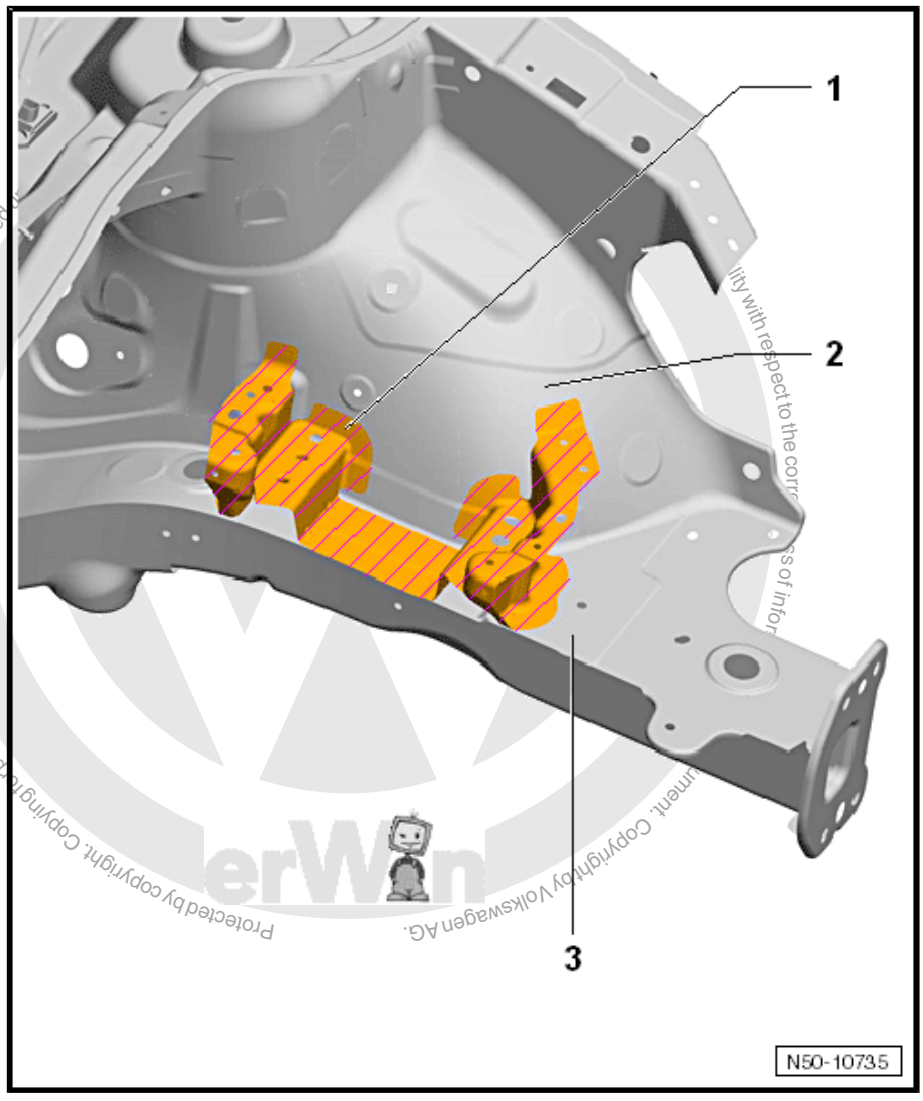
Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Bracket

2 - Wheel Housing

3 - Longitudinal Member



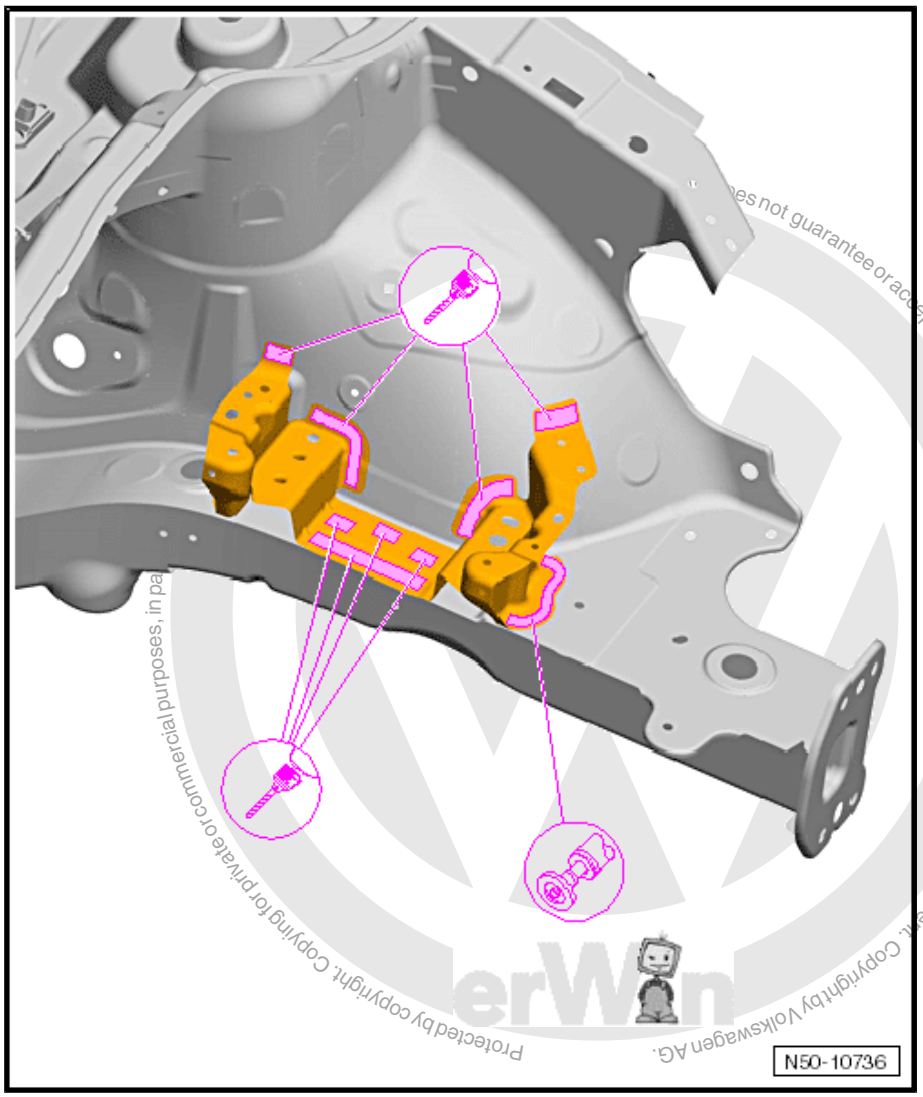
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2.1 Tools

Note

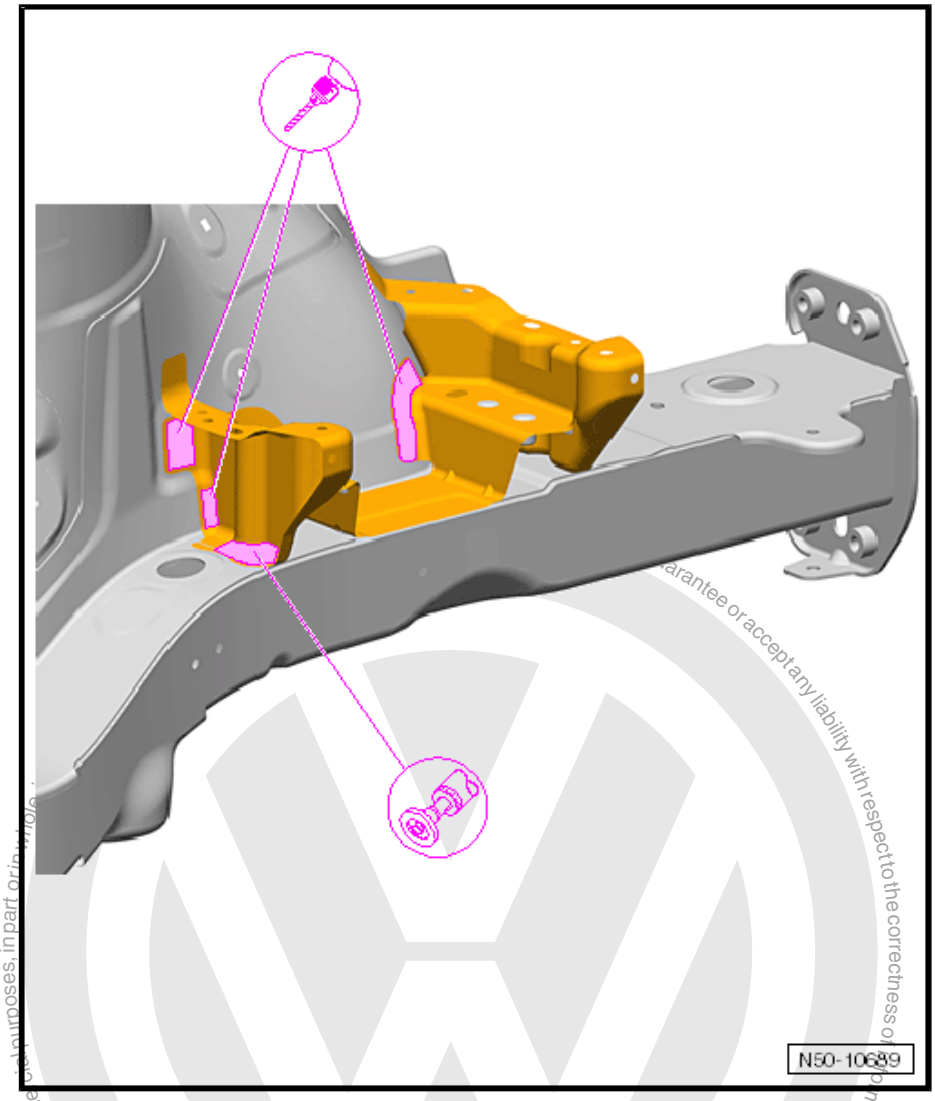
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

2.2 Removing



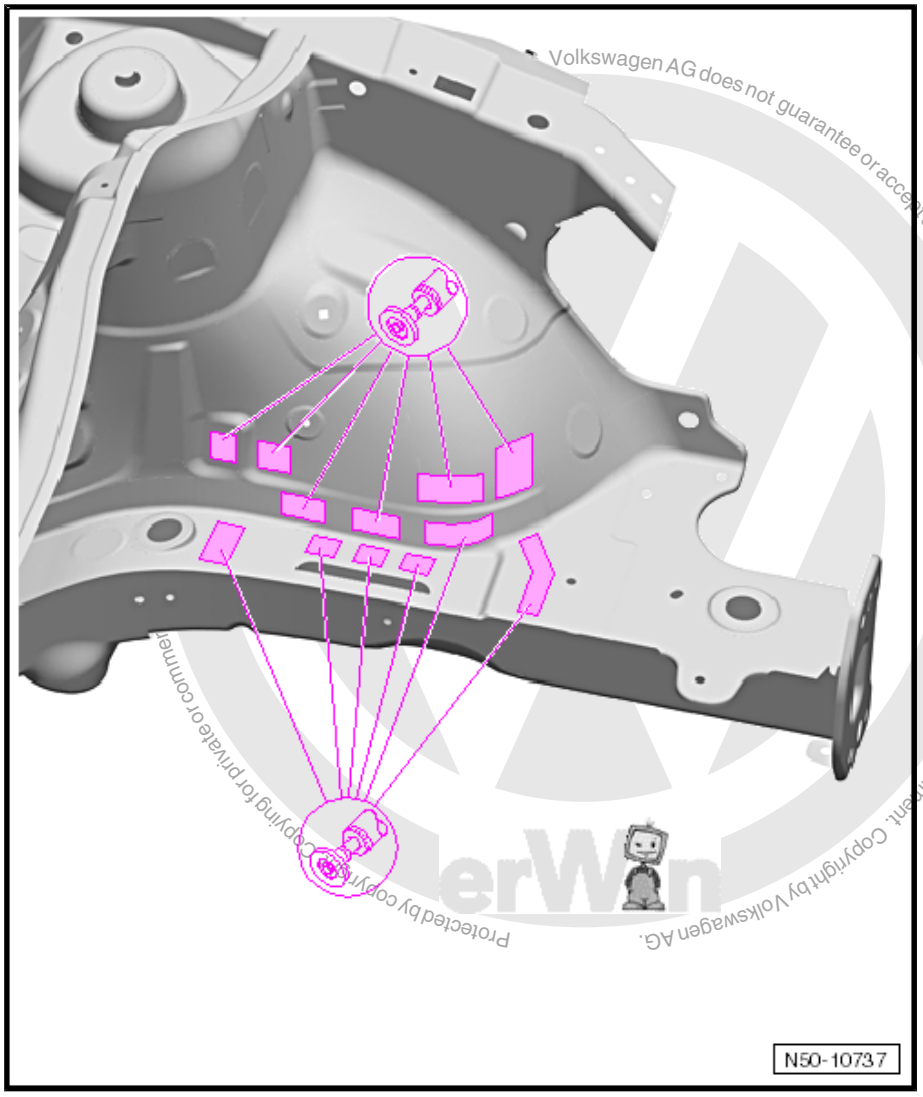
– Separate the original joint.

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– Separate the original joint.

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– Remove residual material.

2.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "2.1 Tools", page 46 .

2.3.1 Preparing New Parts

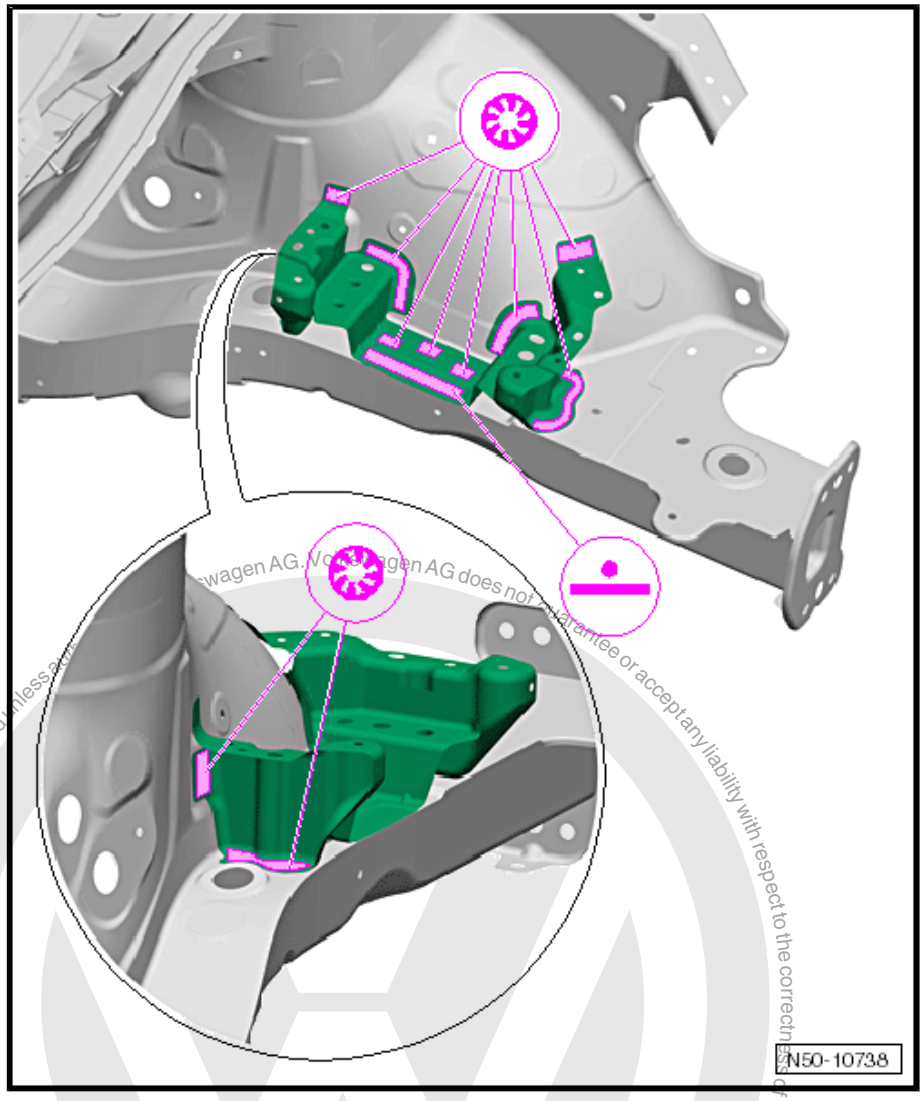
New Part

♦ Left bracket

– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

2.3.2 Welding

– Fit new part to vehicle standing on Alignment Bracket Set and secure.



– Weld in console, Gas-shielded arc plug weld seam and straight-line spot weld seam.

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RO: 50 43 55 00

3 Subframe Bracket, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

Note

On this vehicle for example, replacement of the subframe retaining bracket is described for the front left retaining bracket. Work procedure must be transferred to the other 3 retaining brackets accordingly as necessary.

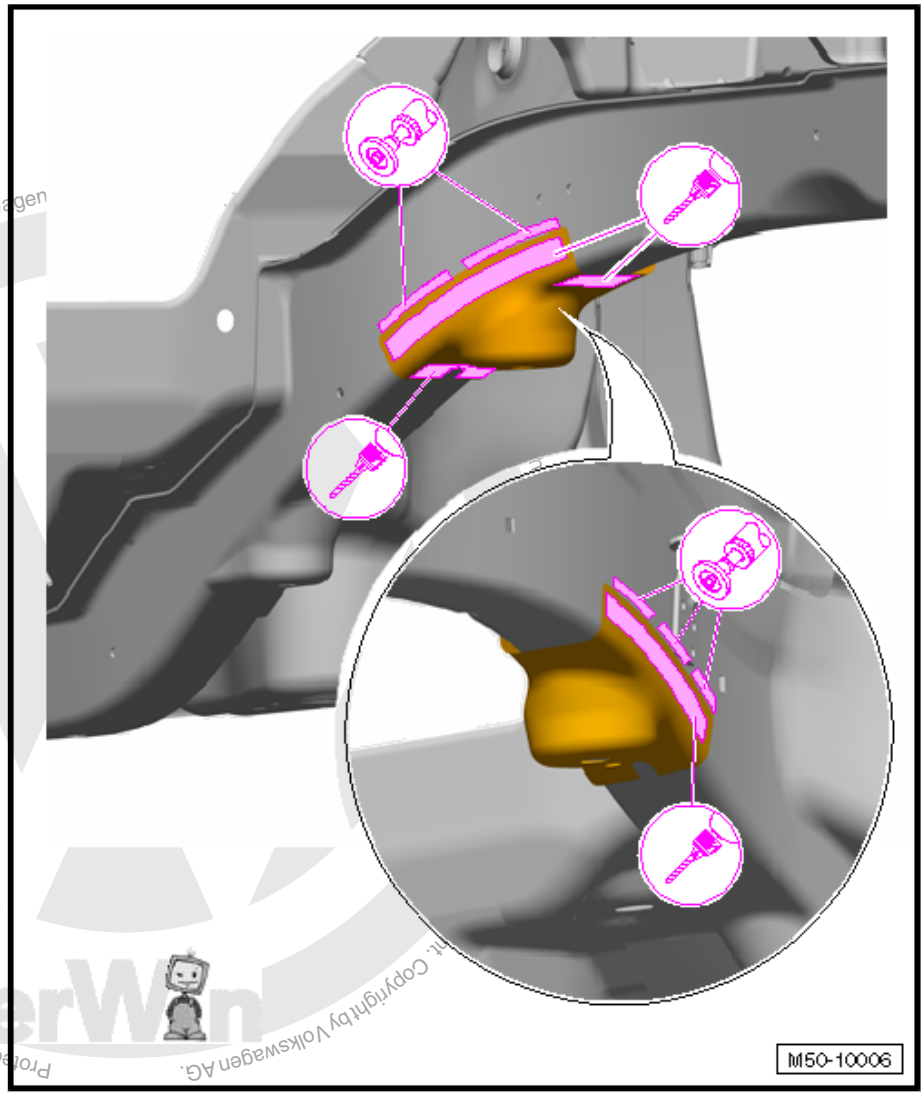
3.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

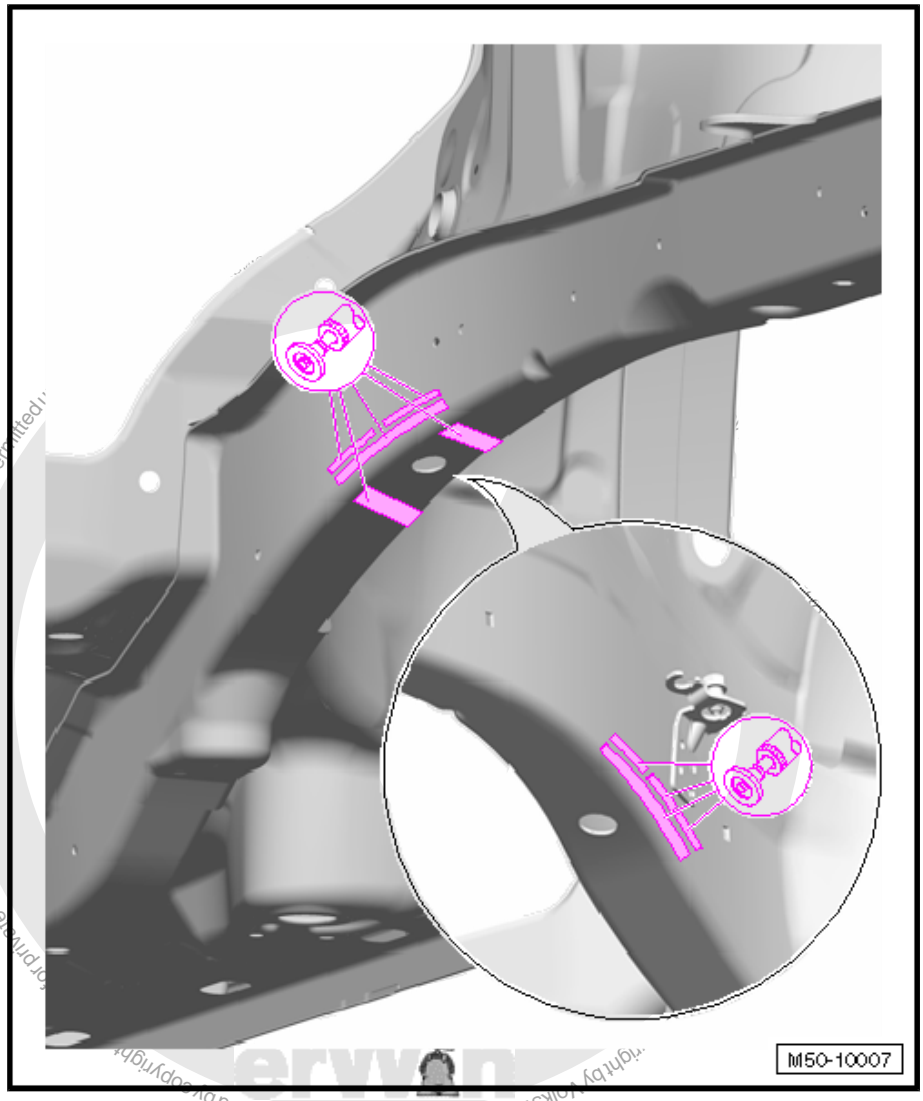
3.2 Removing

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– Separate the original joint.



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– Remove residual material.

3.3 Installing

Note

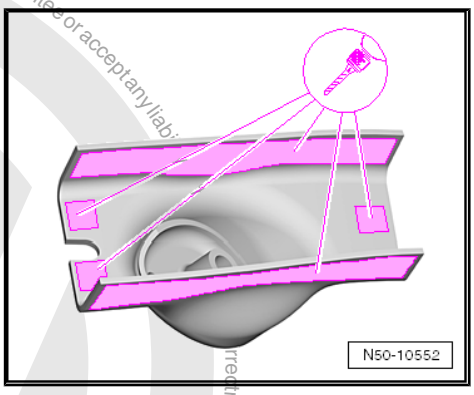
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "3.1 Tools", page 50 .

3.3.1 Preparing New Parts

New Part

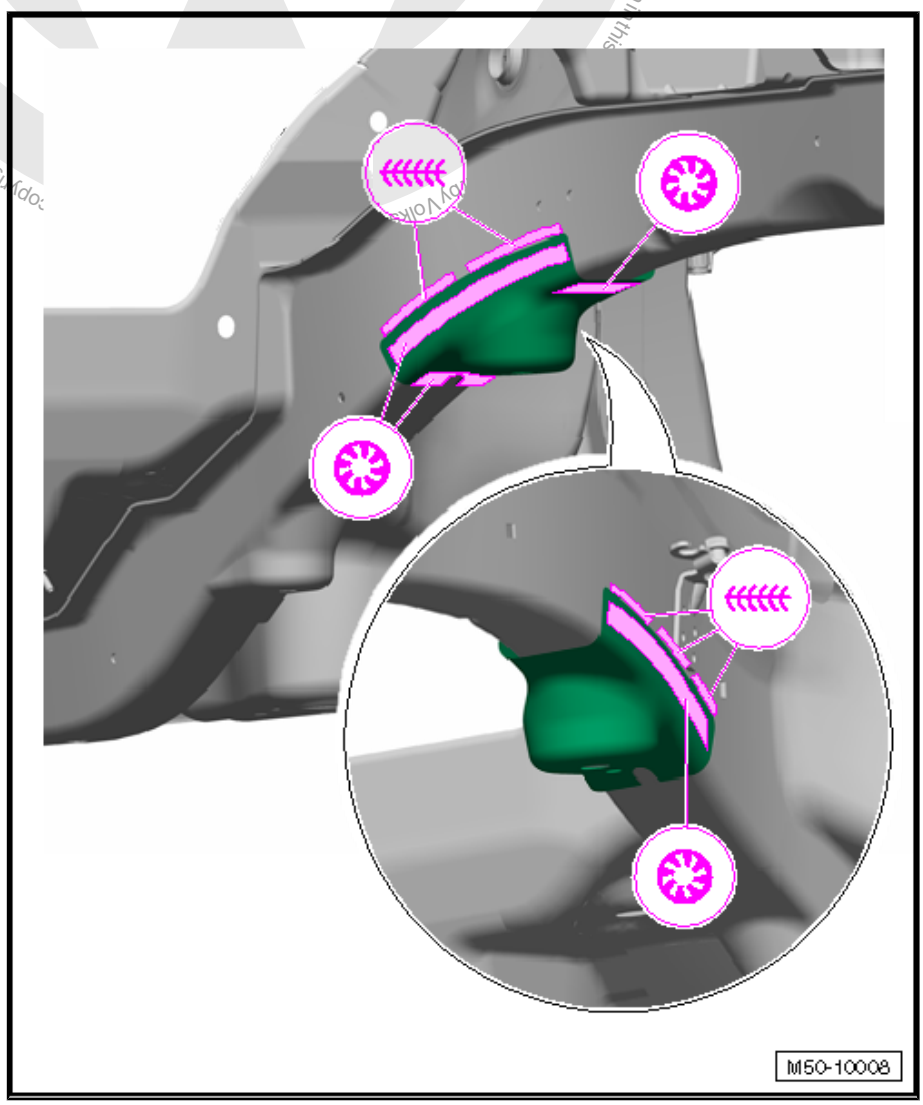
- Front subframe retaining bracket (replacement part name: retaining bracket for subframe)

– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.



3.3.2 Welding

– Fit new part to vehicle standing on Alignment Bracket Set and secure.



– Weld in new part, gas-shielded arc plug weld seam and gas-shielded arc continuous weld seam.

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RO: 50 65 55 00

4 Bumper Bracket, Removing and Installing

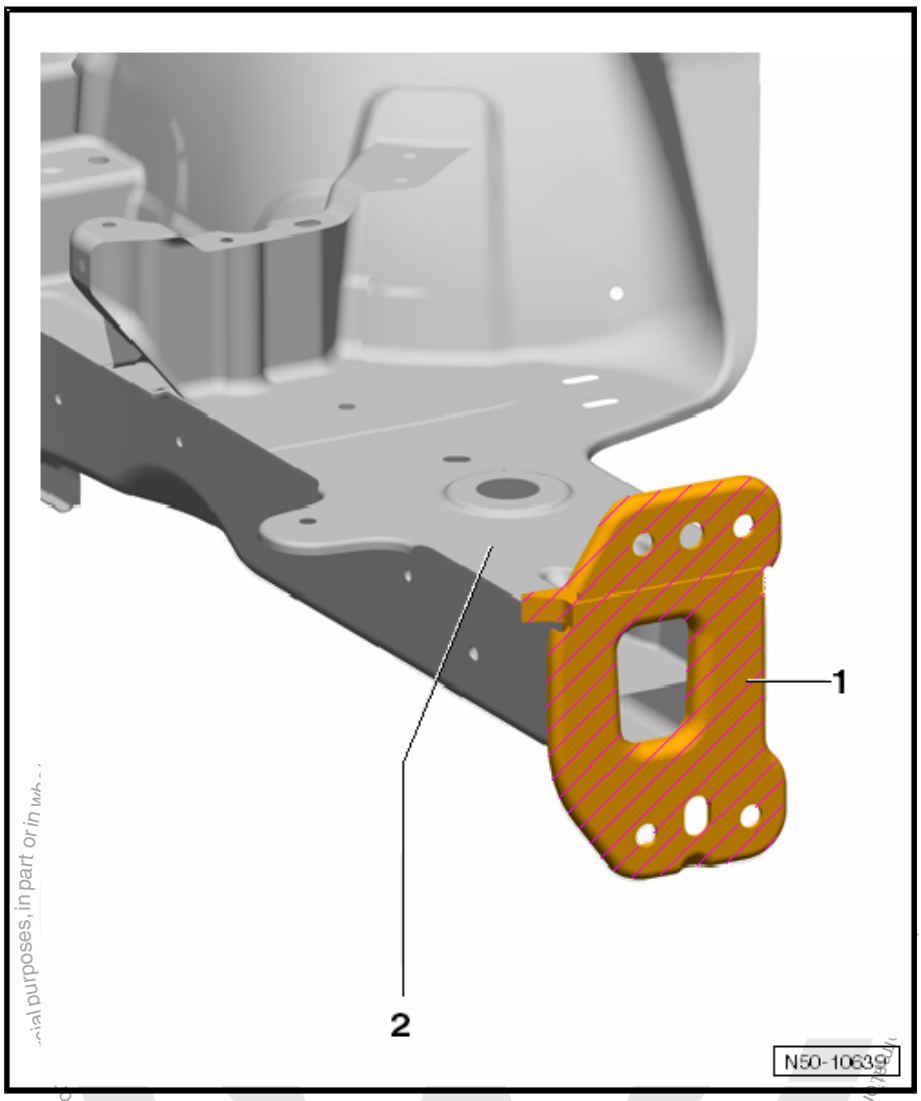
WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Bumper Bracket

2 - Longitudinal Member with Cover Plate



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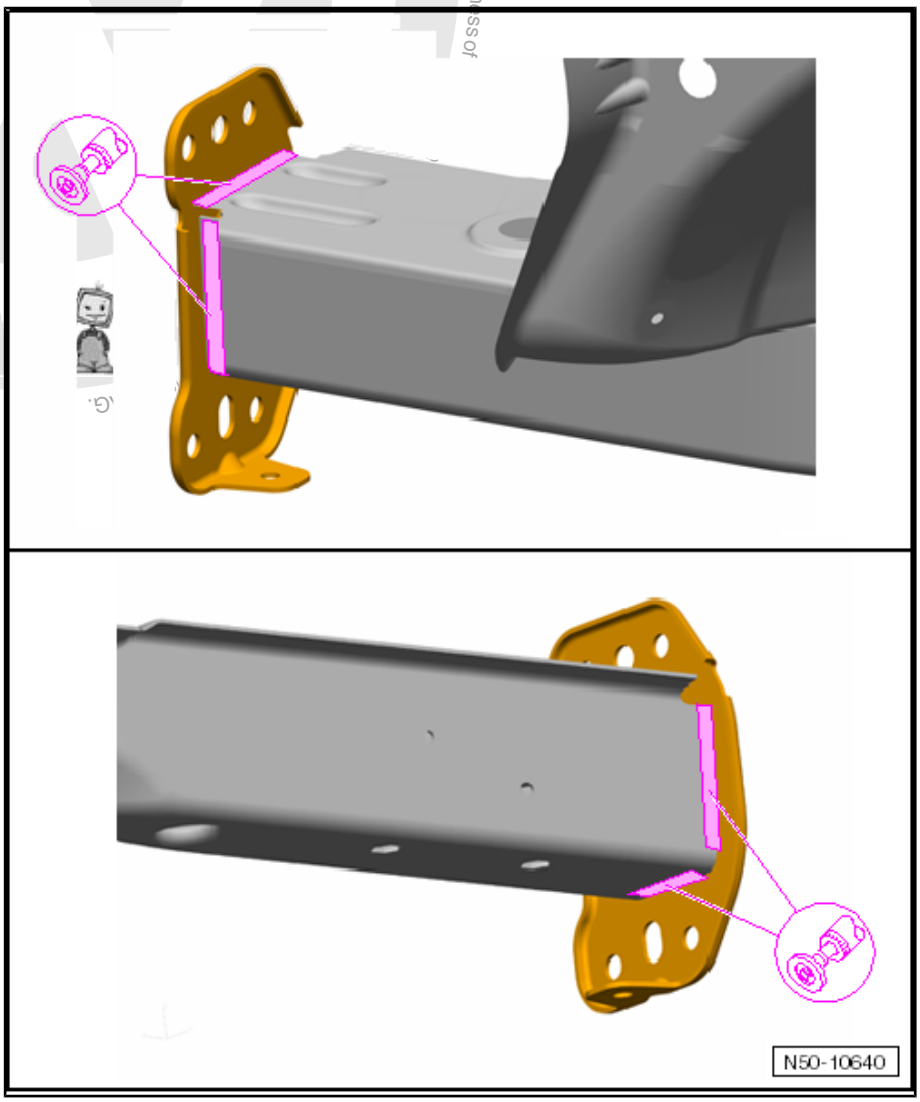
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4.1 Tools

Note

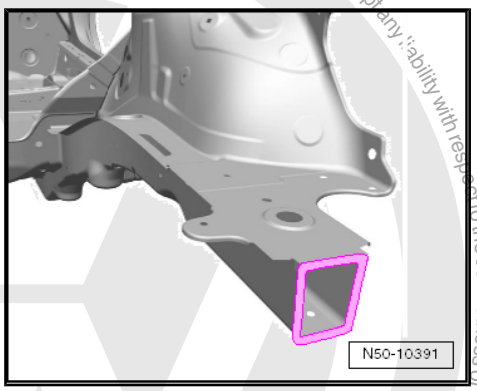
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

4.2 Removing



– Separate the original joint.

– Remove residual material.



4.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ “4.1 Tools”, page 55 .

4.3.1 Welding

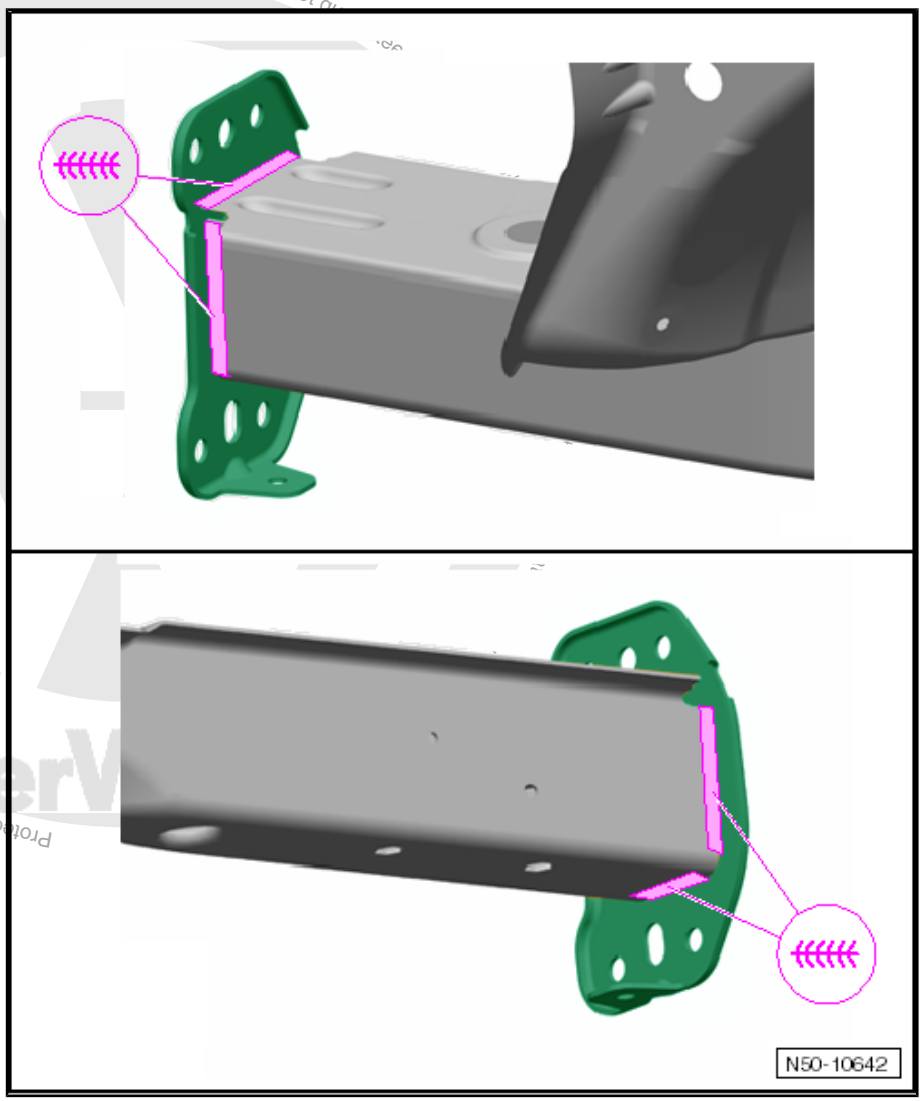
New Part

- Front bumper bracket

– Fit new part to vehicle standing on Alignment Bracket Set and secure.

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– Weld in bumper bracket, gas-shielded arc continuous weld seam.

RO: 50 72 55 00

5 Upper Wheel Housing Longitudinal Member, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Longitudinal Member Adapter Piece

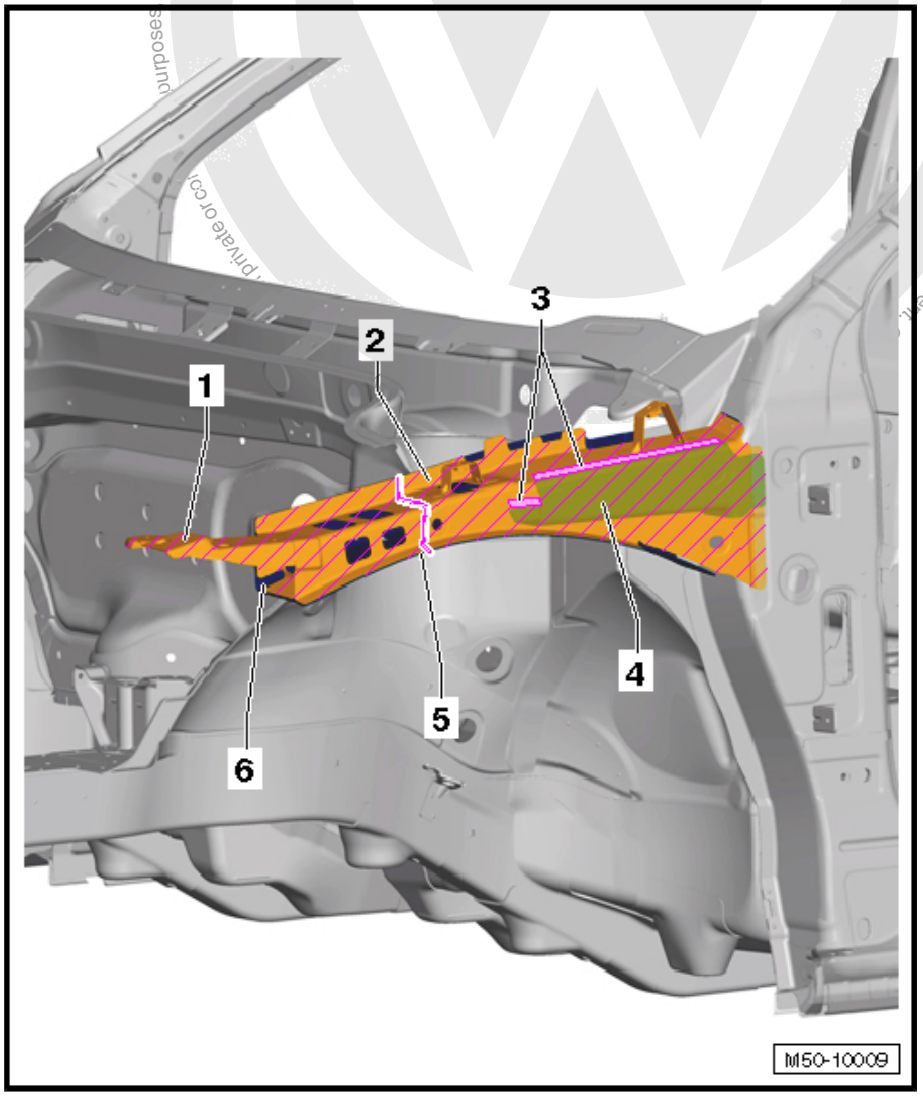
2 - Upper, Outside Wheel Housing Longitudinal Member

3 - Bonded Area

4 - Longitudinal Member End Plate

5 - Separating Cut For Partial Replacement

6 - Upper Inner Longitudinal Member



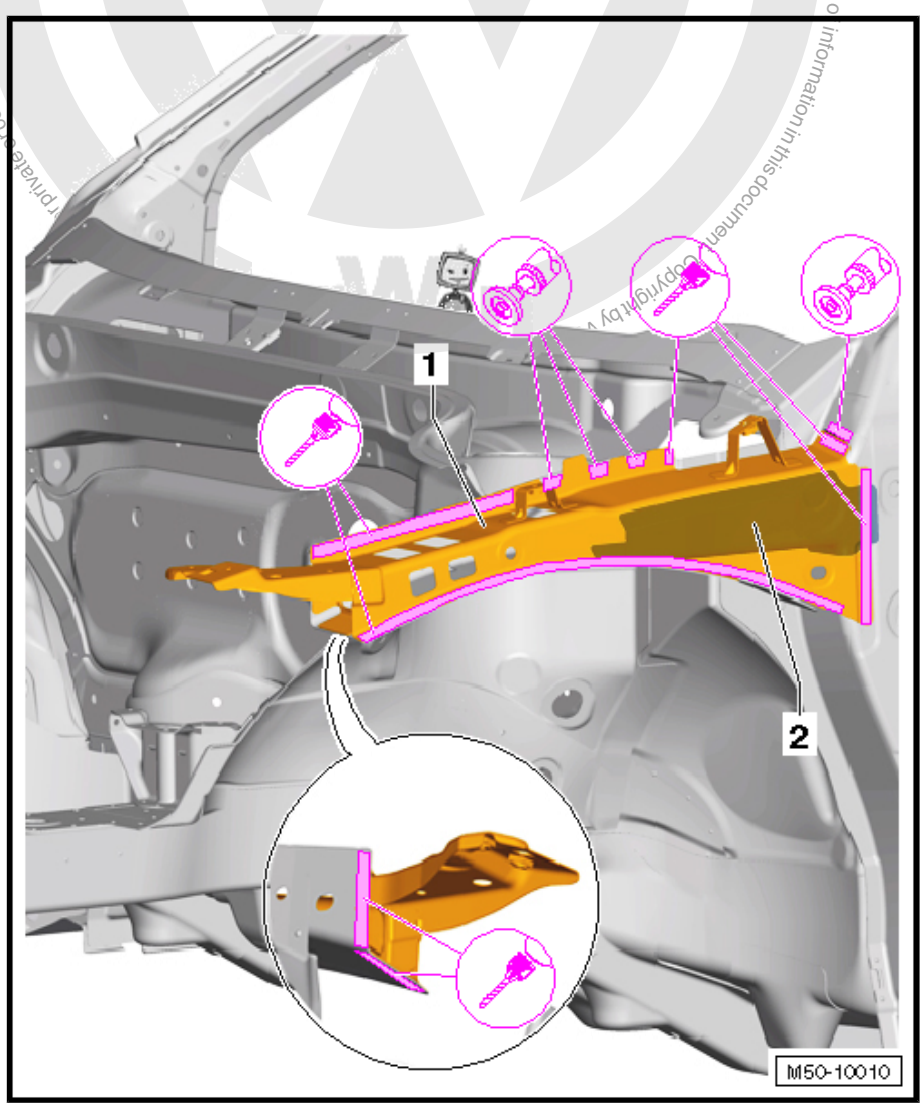
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5.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

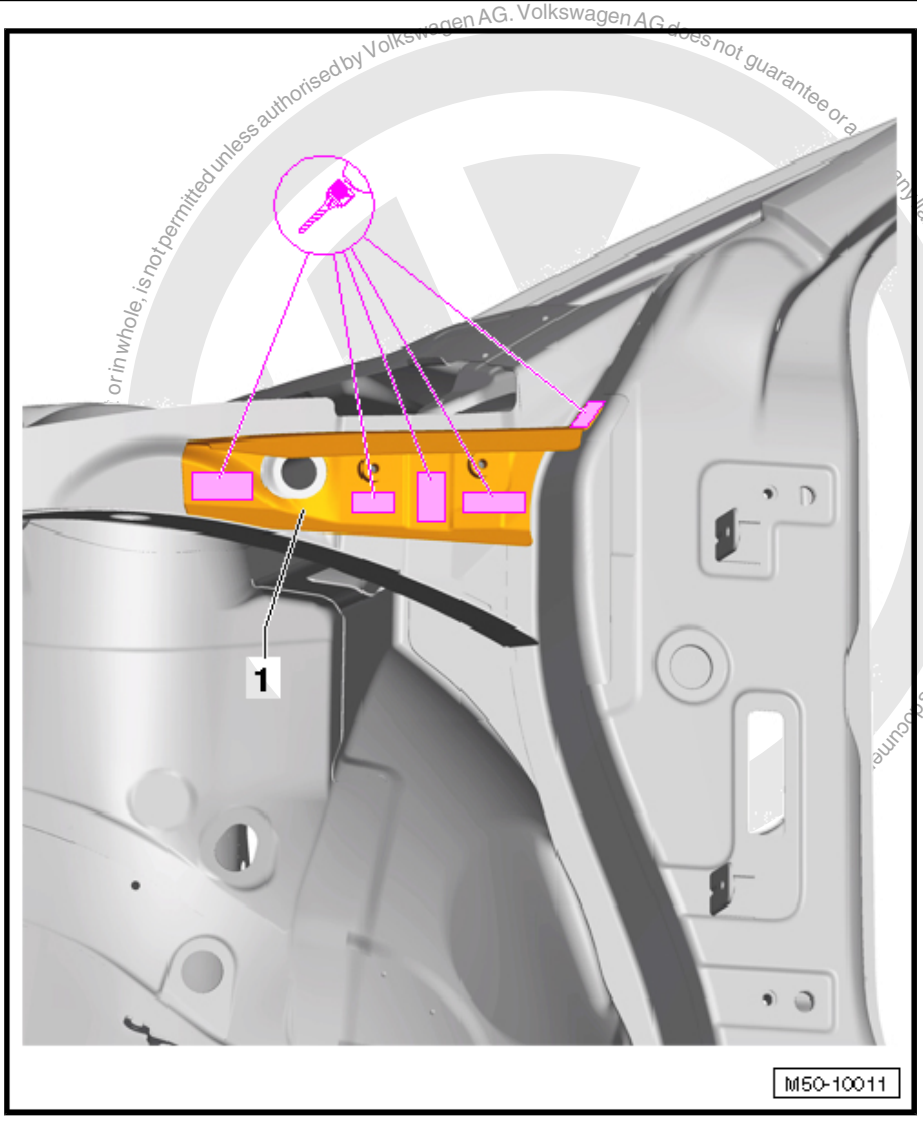
5.2 Removing



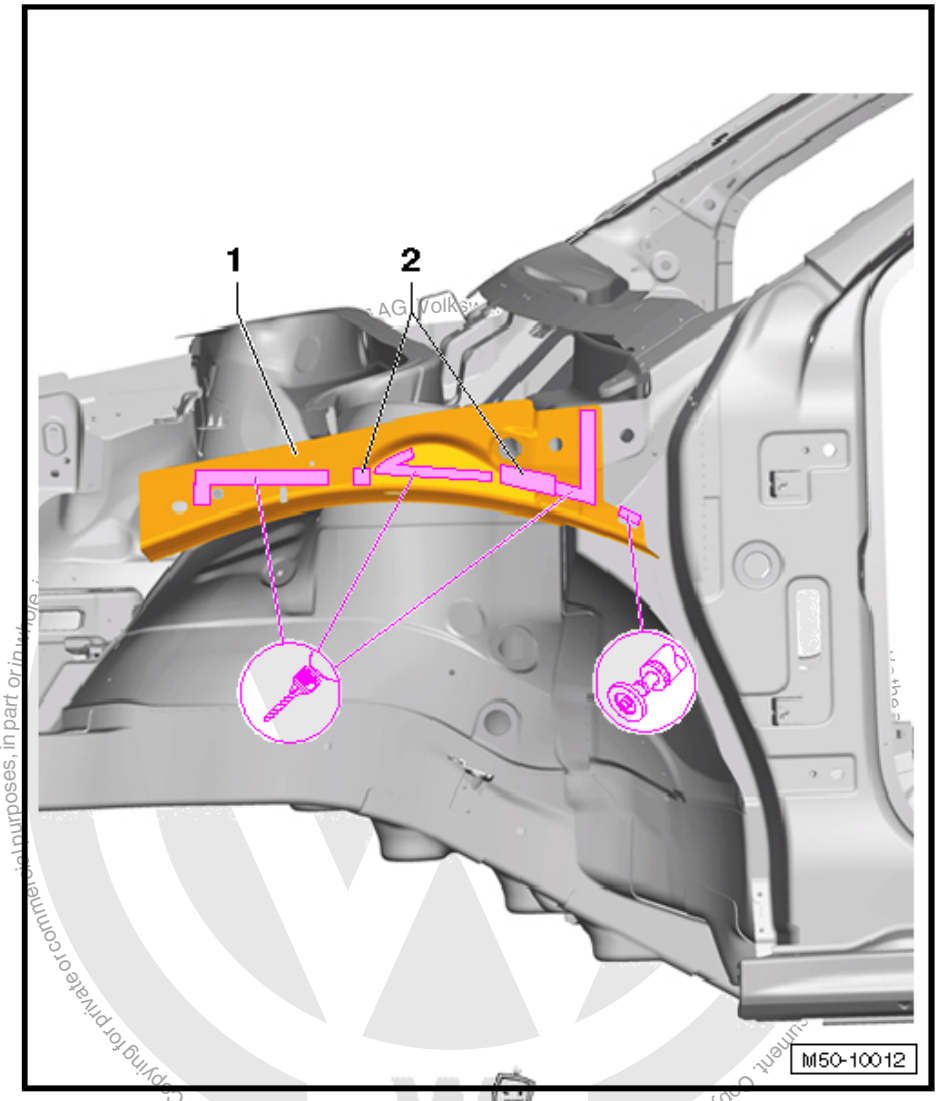
– Disconnect the original joint between outer upper longitudinal member and inner upper longitudinal member, as well as to the A-pillar.

– Remove the end plate -2- together with the inner upper longitudinal member -1-.

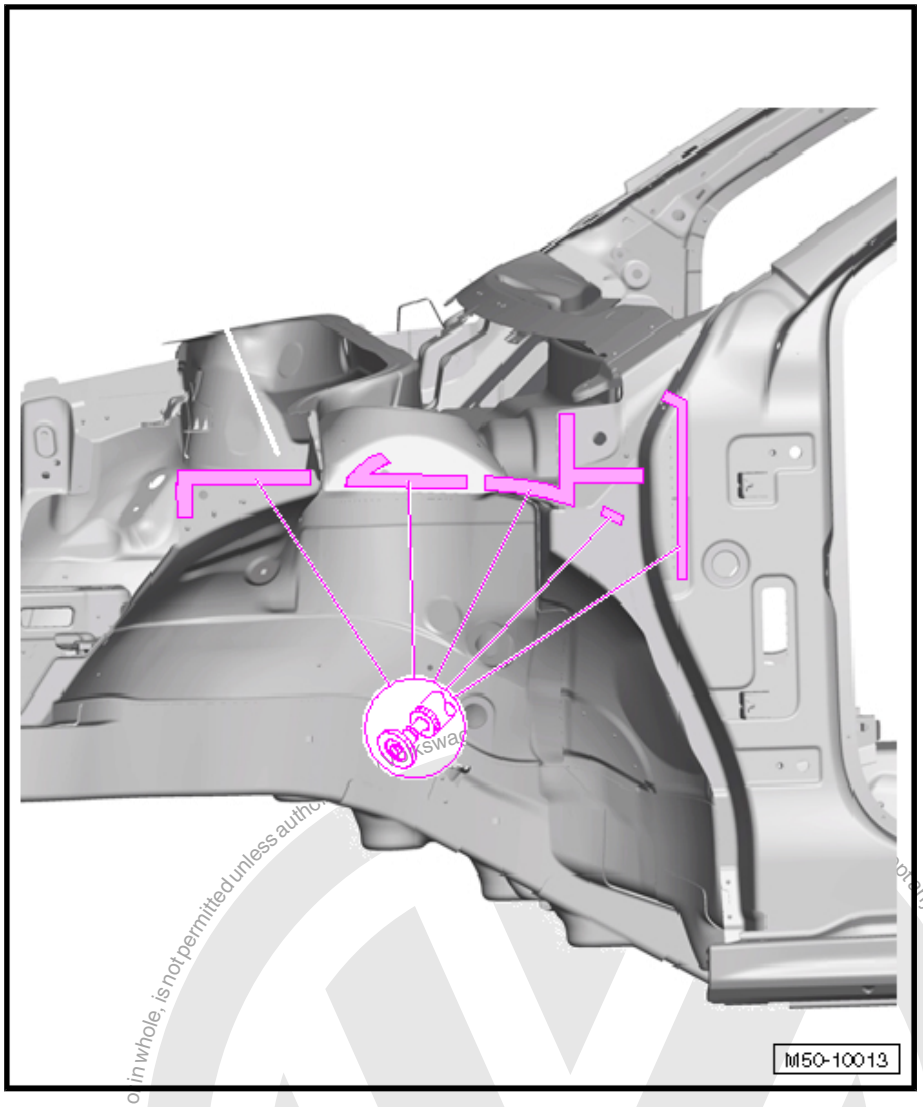
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– Disconnect original joint between outer upper longitudinal member and the hinge reinforcement -1-.



– Separate the original joint and the bonded areas -2- on the inner upper longitudinal member -1-.



– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.
– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
– Lightly sand the adhesive surfaces in the connection.

5.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "5.1 Tools", page 59 .

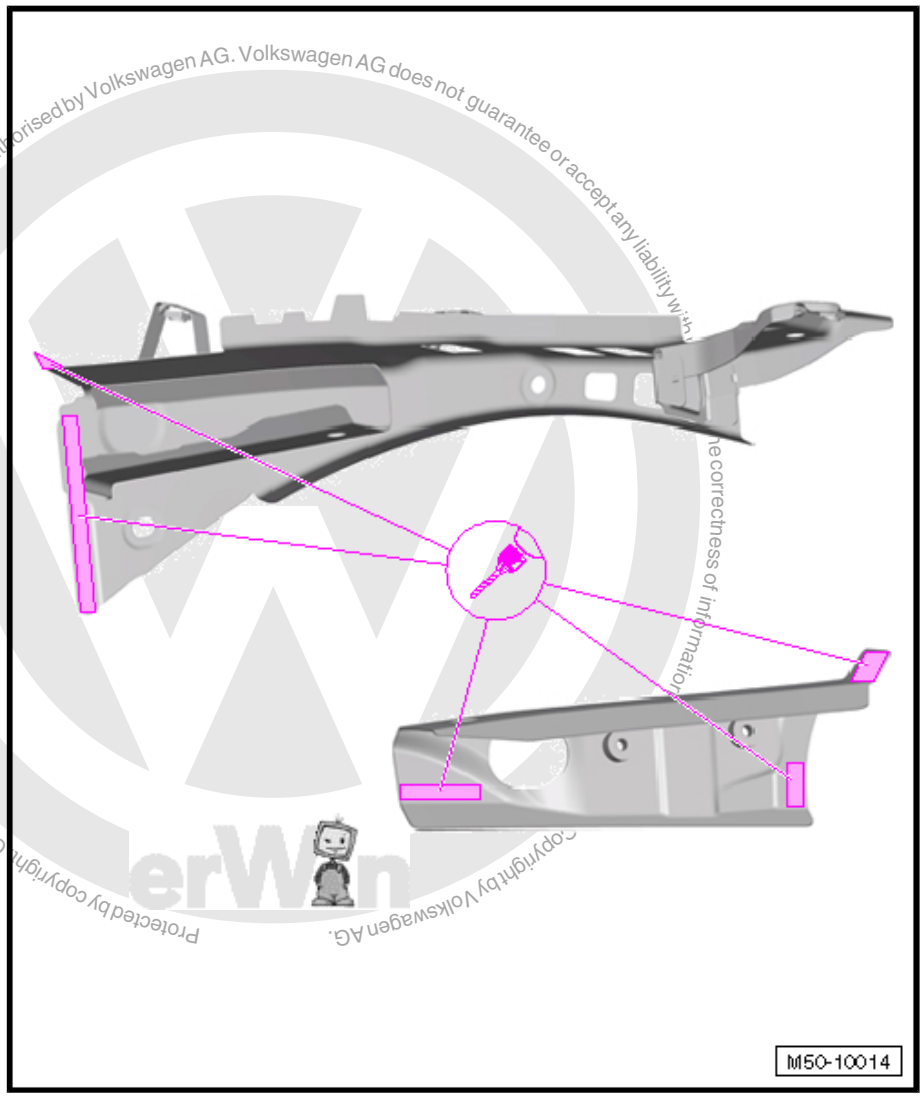
5.3.1 Preparing New Parts

New Part

- Upper, inside wheel housing longitudinal member
- Upper outside wheel housing longitudinal member with end plate and adapter piece

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♦ 2K Body Adhesive - D 180 KD3 A2-



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– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

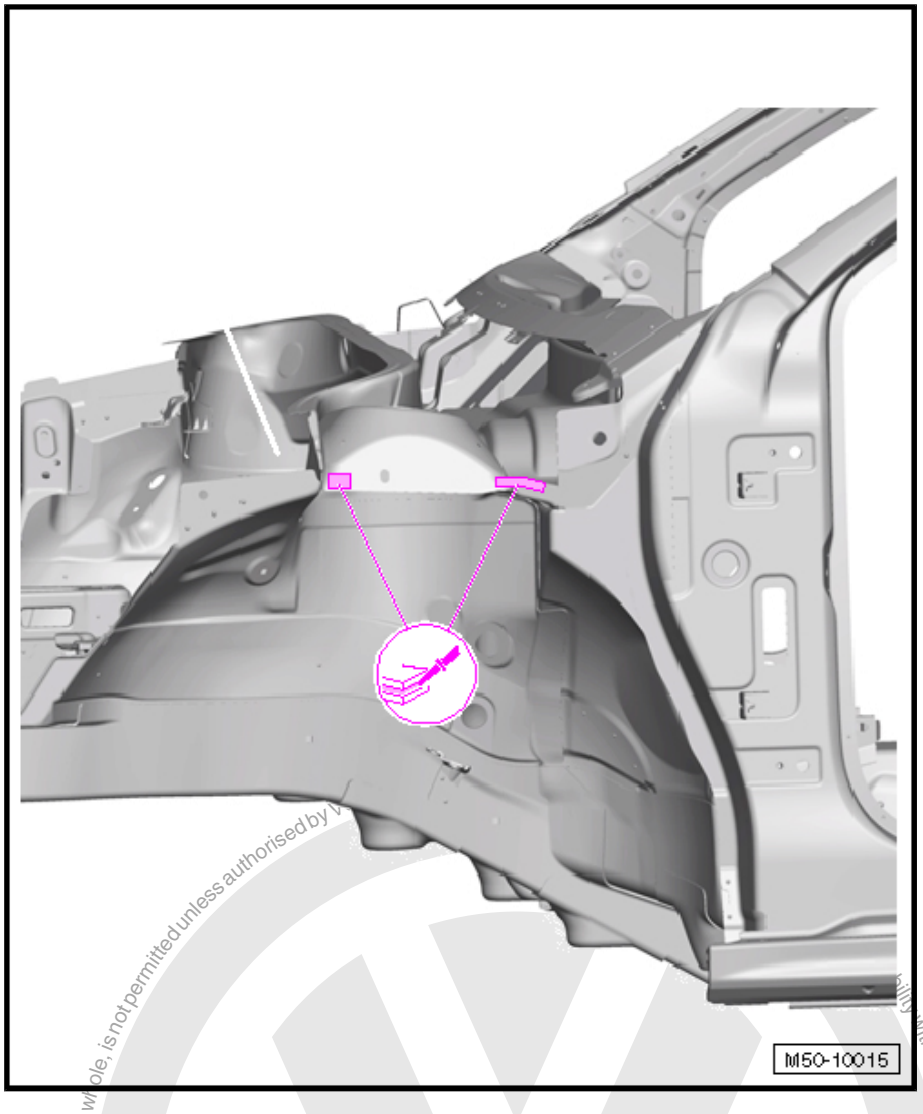
5.3.2 Welding

– Fit new part to vehicle standing on Alignment Bracket Set and secure.

– Check fit with attachments.

Note

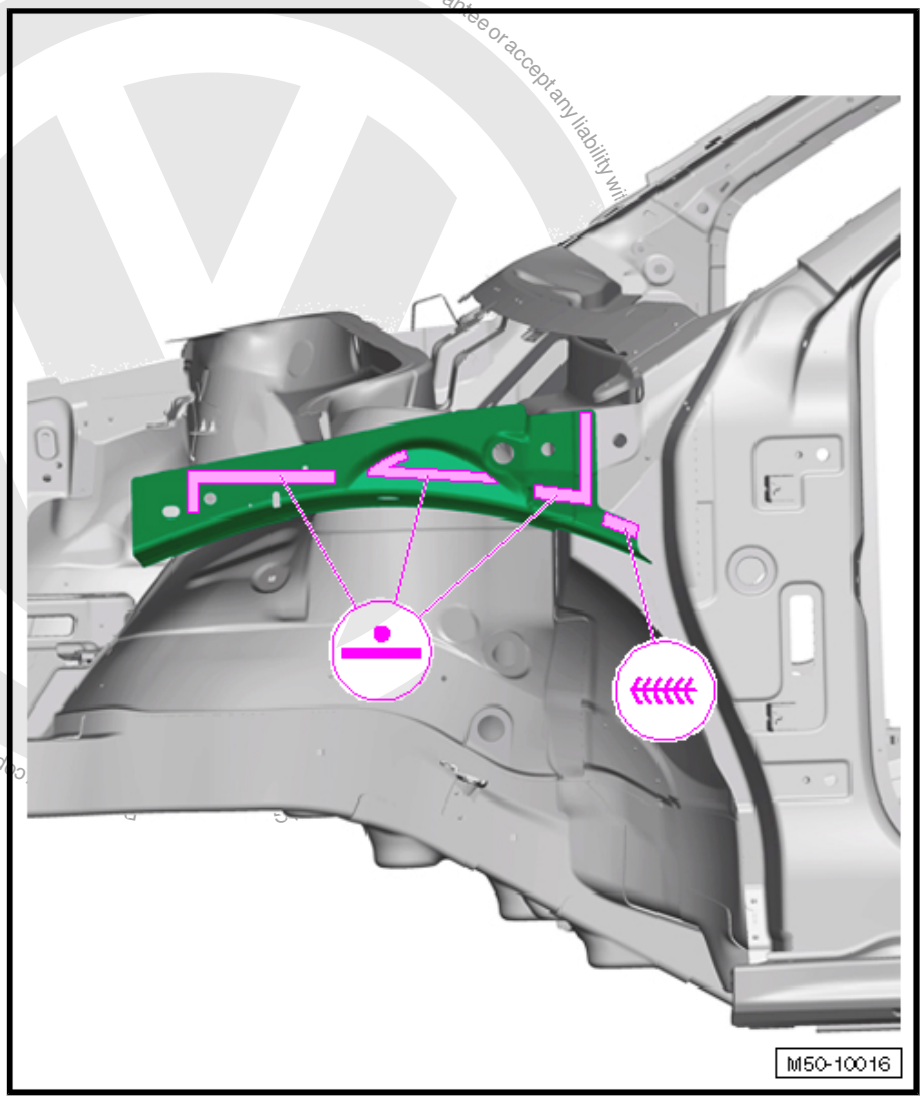
New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.



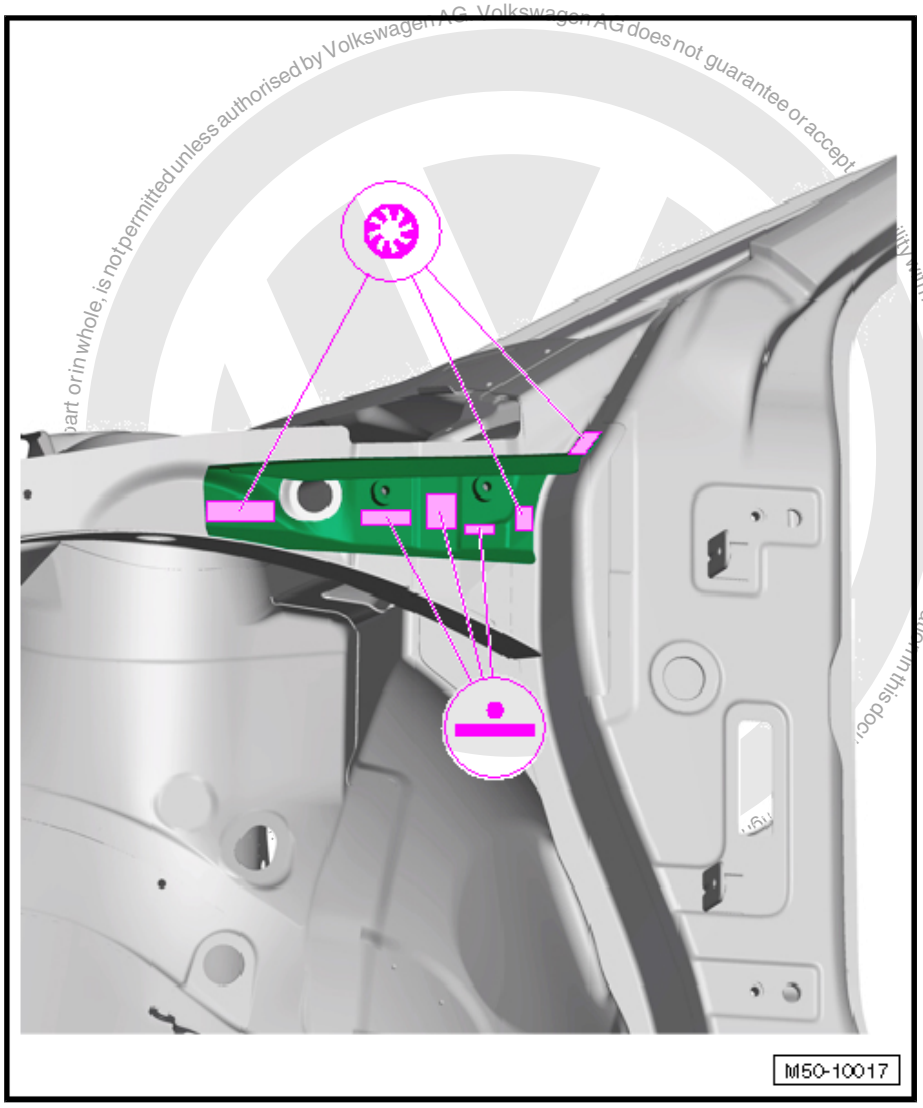
– Apply 2K Body Adhesive - D 180 KD3 A2- in the area where adhesive on the wheel housing was applied during production.

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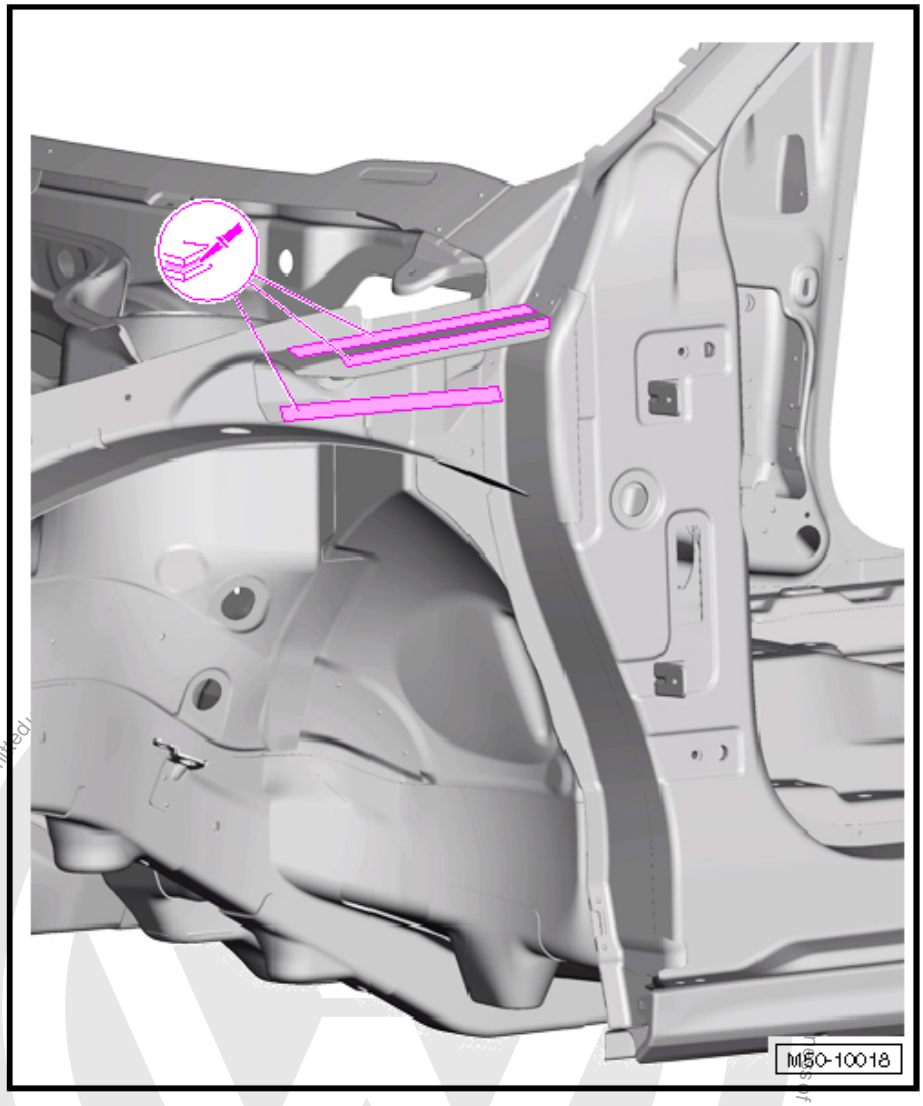
– Weld in longitudinal member for upper inner wheel housing, straight-line spot weld seam and gas-shielded arc continuous weld seam.



– Weld in hinge reinforcement with a straight-line spot weld seam and gas-shielded arc plug weld seam.

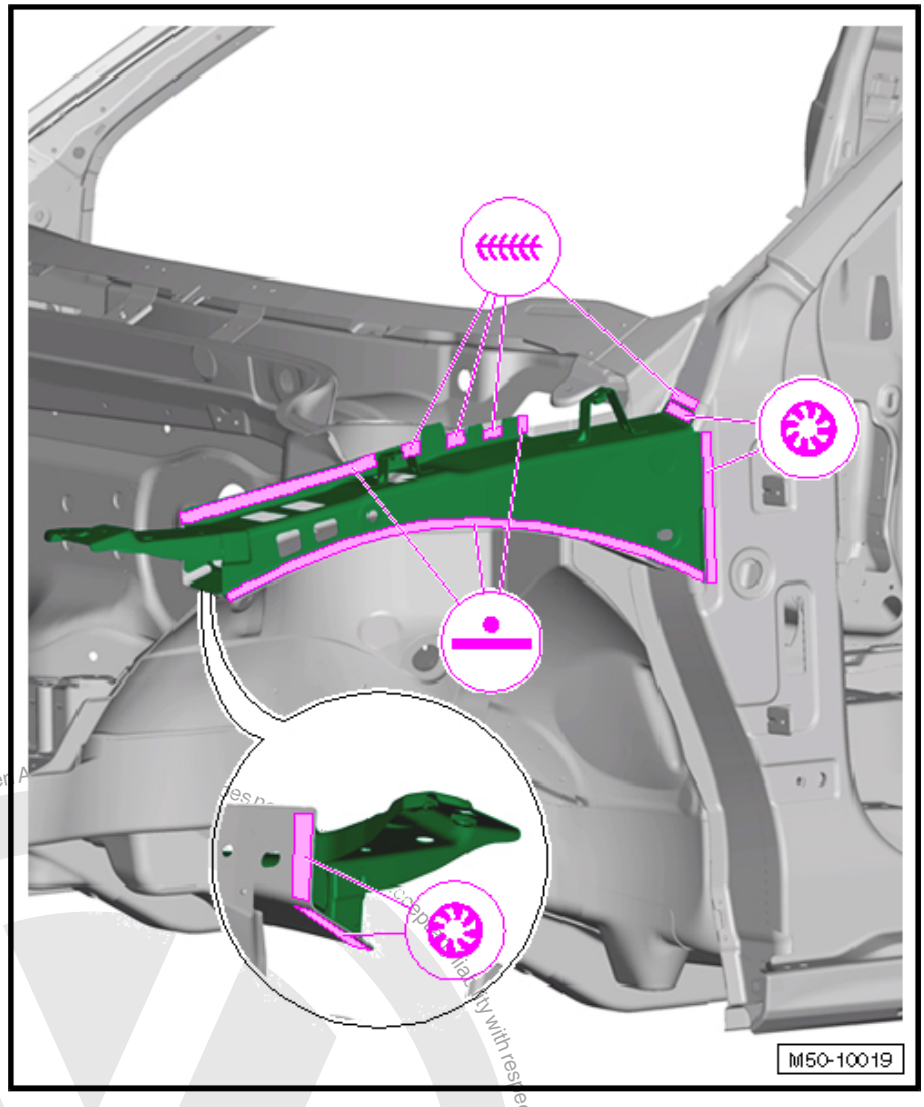
Note

New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.



– Apply 2K Body Adhesive - D 180 KD3 A2- in the area where adhesive on the hinge reinforcement was applied during production.

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– Weld in longitudinal member for upper outside wheel housing, Gas-shielded arc plug weld seam and straight-line spot weld seam.

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RO: 50 74 55 50

6 Front Wheel Housing, Removing and Installing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

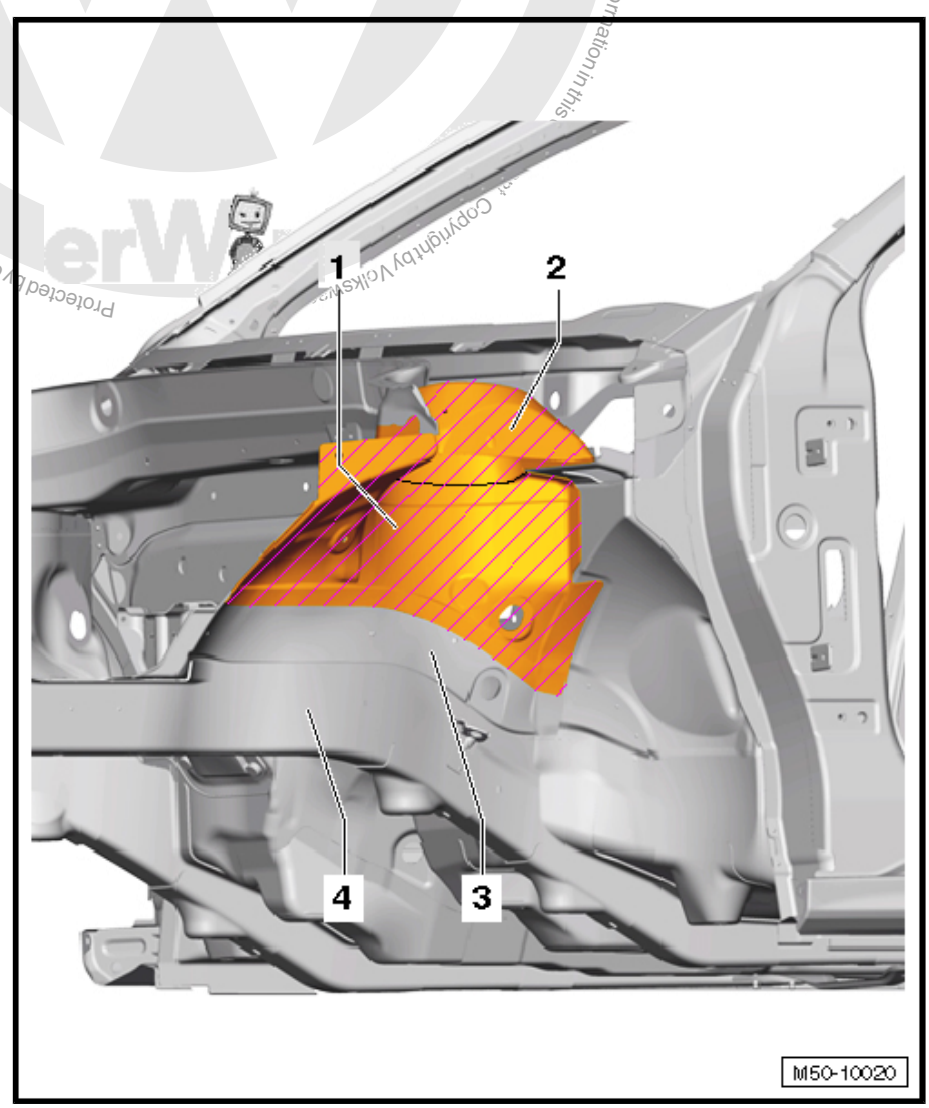
- Longitudinal member for upper wheel housing already removed, refer to ⇒ “5 Upper Wheel Housing Longitudinal Member, Replacing”, page 58 .

1 - Wheel Housing

2 - Suspension Strut Dome

3 - Cover Plate for Longitudinal Member

4 - Front Longitudinal Member



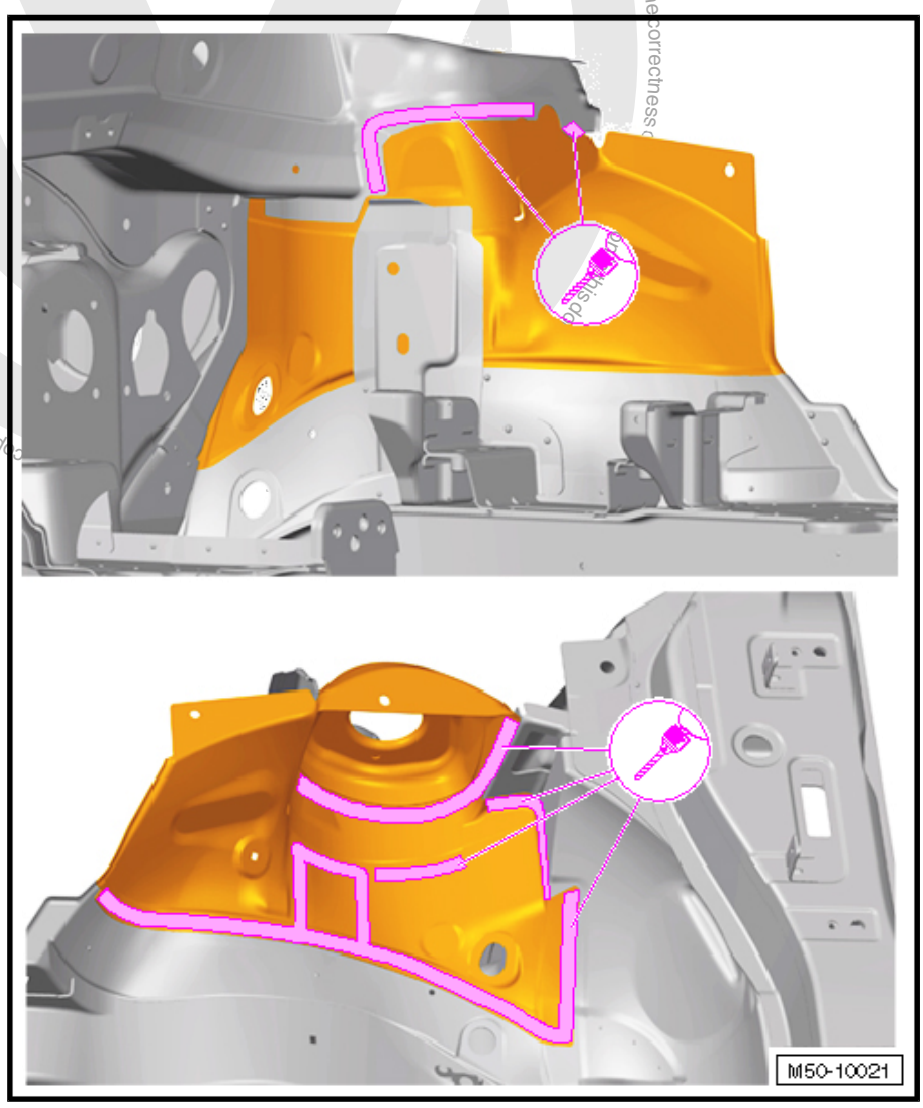
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6.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

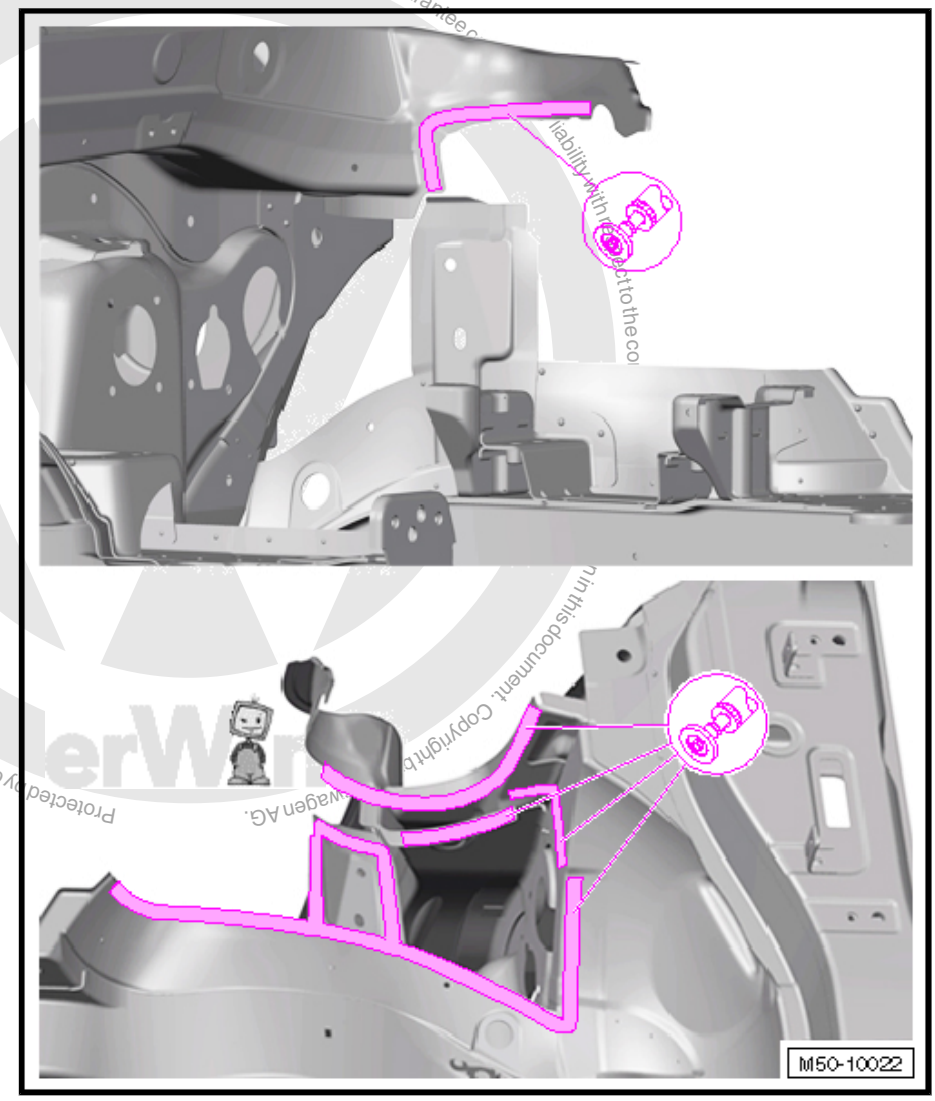
6.2 Removing



– Separate the original joint.

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– Remove residual material.

6.3 Installing

Note

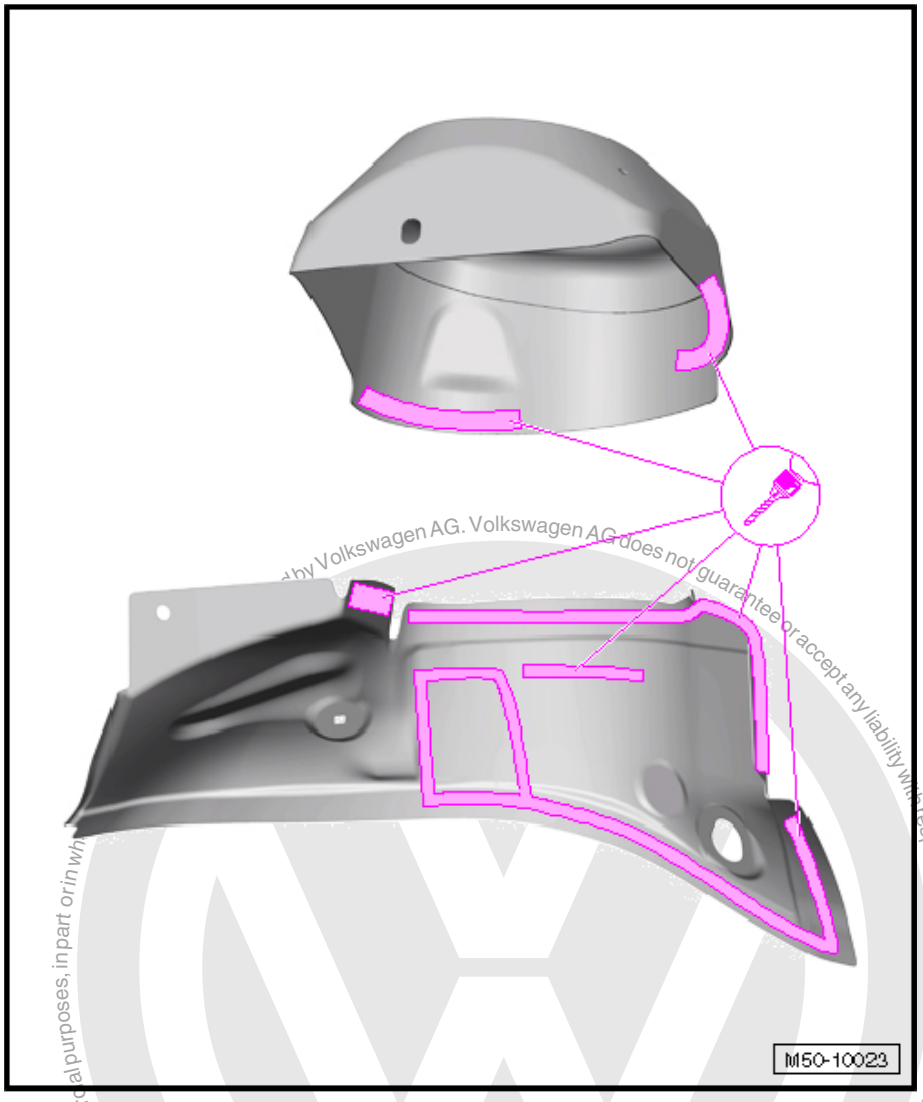
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "6.1 Tools", page 70 .

6.3.1 Preparing New Parts

- Wheel housing
- Suspension strut dome

– Fit new part to vehicle standing on Alignment Bracket Set and secure.

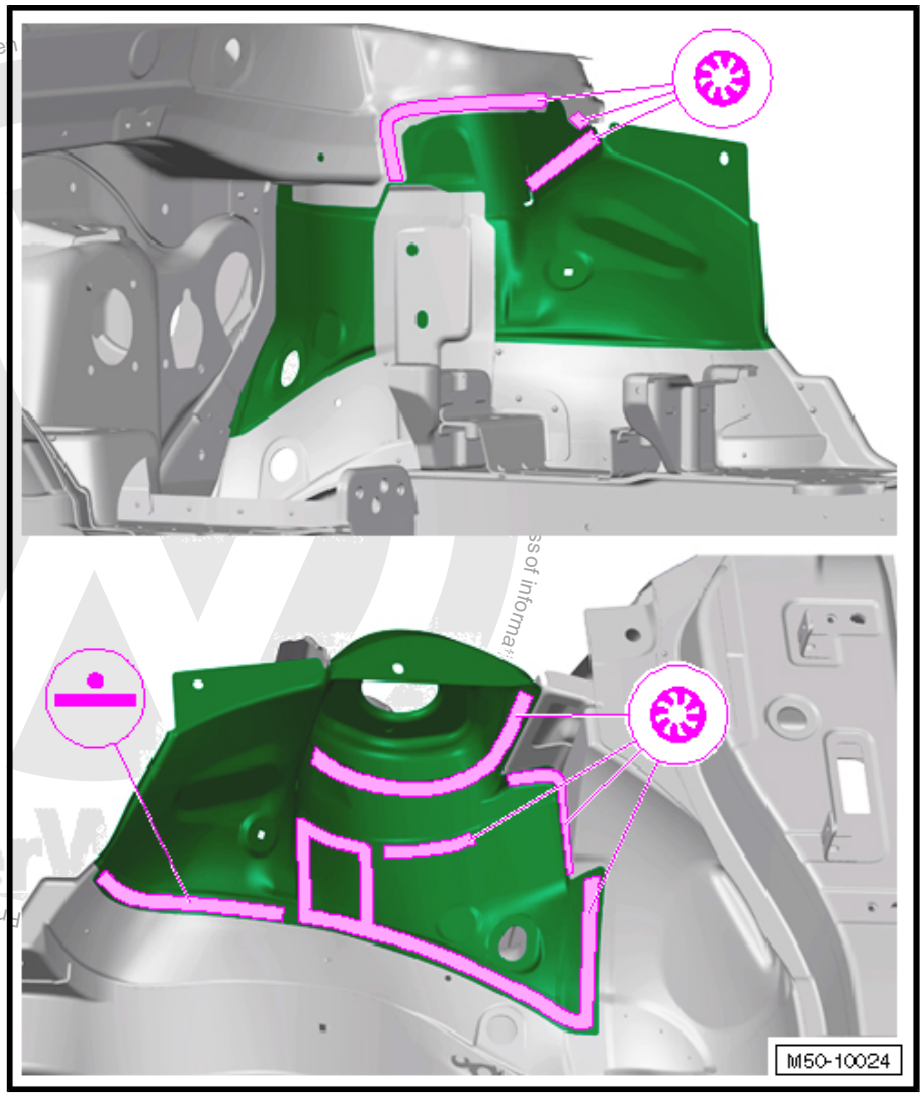
– Check fit with attachments.



– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

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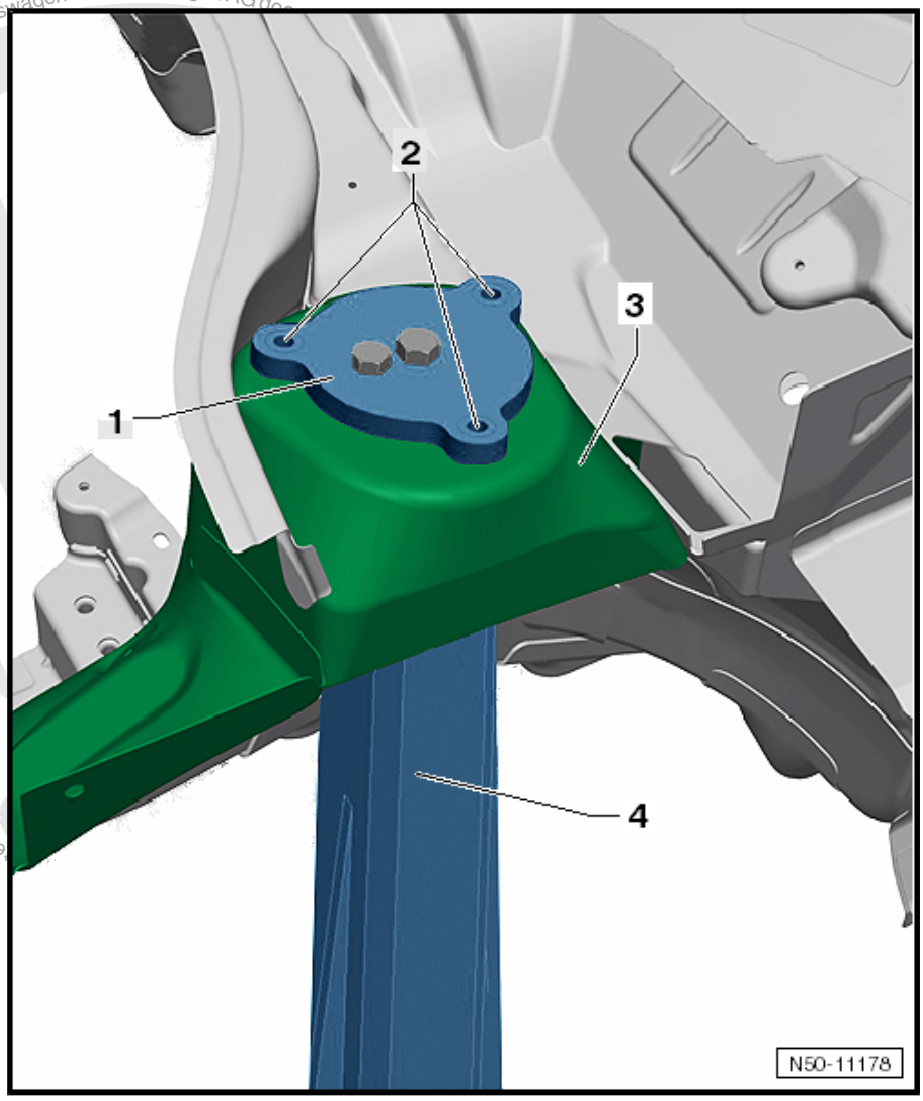
6.3.2 Welding



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– Weld in wheel housing with suspension strut tower, gas-shielded arc plug weld seam and straight-line spot weld seam.

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– Place the drilling template -1- on the alignment bracket -4-.
– Drill 11 mm holes -2- into the suspension strut tower reinforcement -3-.
– Install upper wheel housing longitudinal member, refer to ⇒ “5.3 Installing”, page 62 .

RO: 50 79 49 90

7 Thread on Subframe Mounting (Suspension Subframe), Servicing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Subframe (suspension subframe) was already removed, refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe, Stabilizer Bar and Control Arm .

Note

In the example, thread repair on this vehicle is described for left front retaining bracket for subframe and is to be employed at the other 3 retaining brackets accordingly as necessary.

Special tools and workshop equipment required

- Thread Repair Kit M12x1.5 - VAS6058-
- Drill - VAS6267-

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1 - Front Longitudinal Member

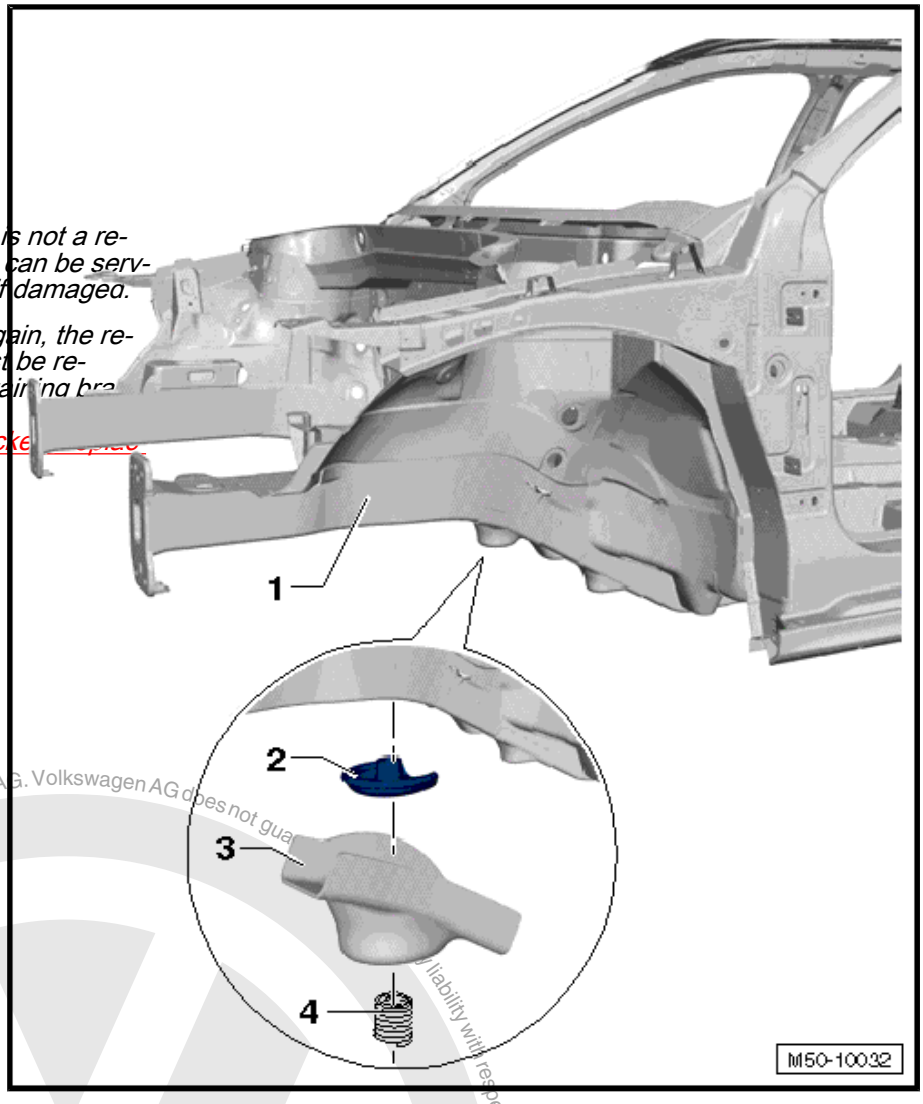
2 - Threaded Plate (Welded Into Subframe Retaining Bracket)

Note

- *The threaded plate is not a replacement part and can be serviced only one time if damaged.*
- *If damaged once again, the retaining bracket must be replaced. Replace retaining bracket, refer to* *⇒ "3 Subframe Bracket, replacing", page 50* .

3 - Subframe Retaining Bracket (Welded to the Longitudinal Member)

4 - Heli-Coil Insert



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7.1 Contents of Thread Repair Set

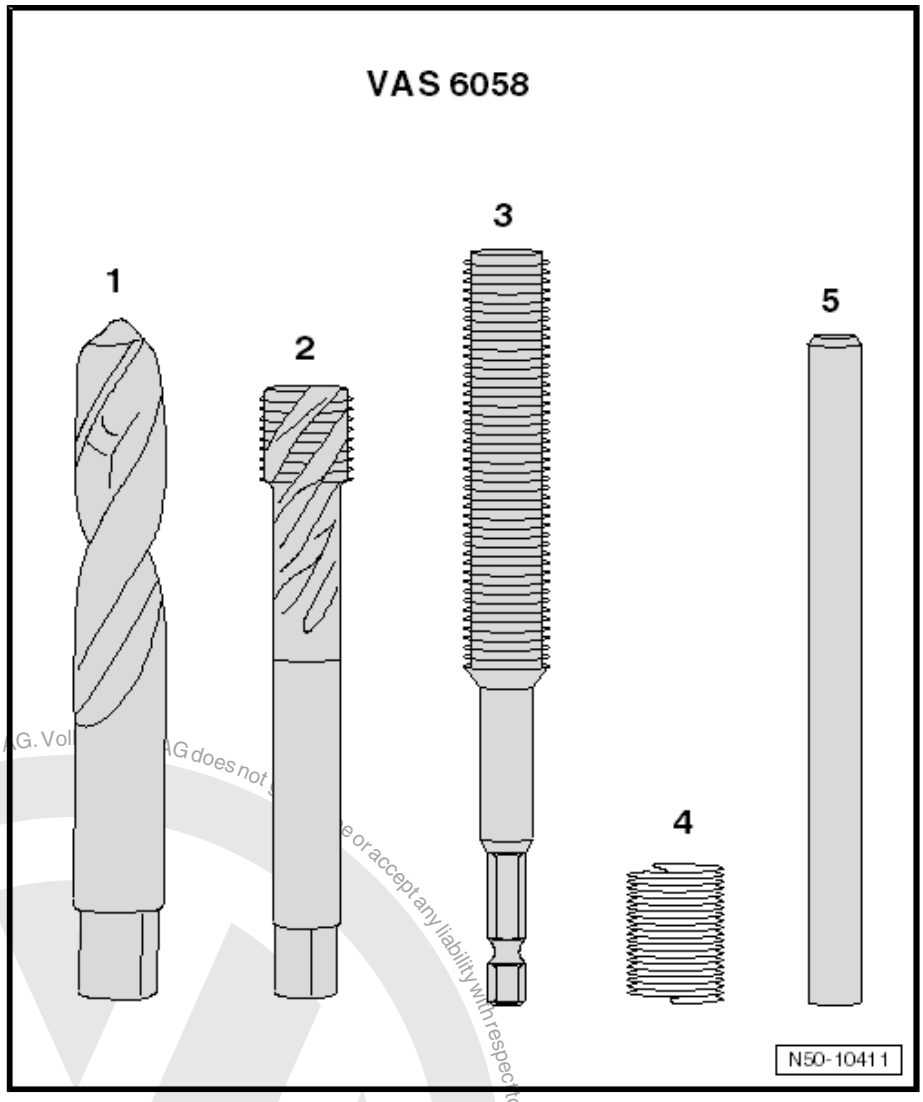
1 - Spiral Drill Diameter 12.5 mm

2 - Tap M 12 x 1.5

3 - Installing Spindle

4 - Threaded Insert M 12 x 1.5 x 24 (- VAS6058/1-)

5 - Peg Breaker with Magnetic Tips



7.2 Thread, Servicing

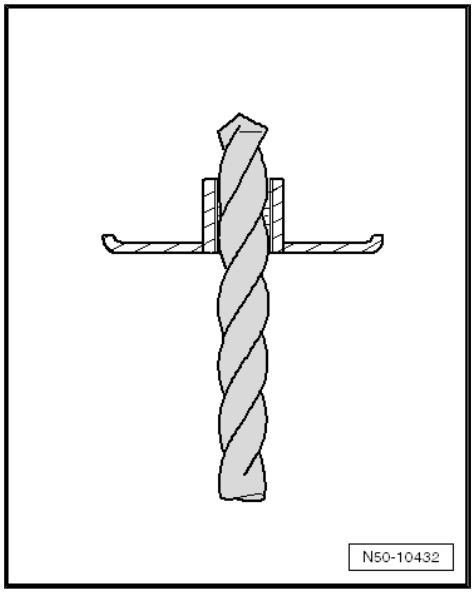
7.2.1 Threads, Drilling

Caution

Wear protective eyewear when drilling out the threads.

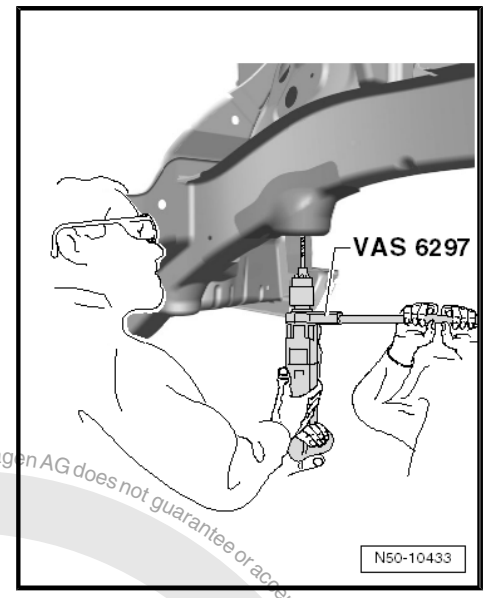
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– Drill out the threads with the spiral drill.



Note

- *Use the Drill - VAS6267- for drilling and grinding.*
- *While drilling, drill must be held by a second person using an additional handle.*
- *Do not angle the drill.*



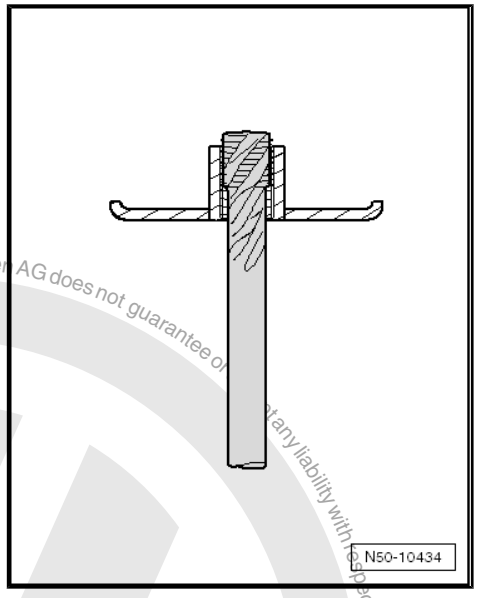
7.2.2 Threads, Cutting

Caution

Wear protective eyewear when cutting the thread and when cleaning the threaded bushing with compressed air.

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– Cut the threads with the thread tap.
– Clean threaded bushing (blow with pressurized air).

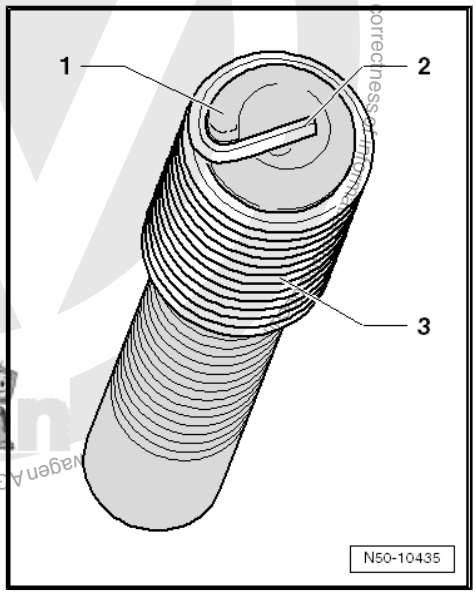


7.2.3 Thread Inserts, Inserting

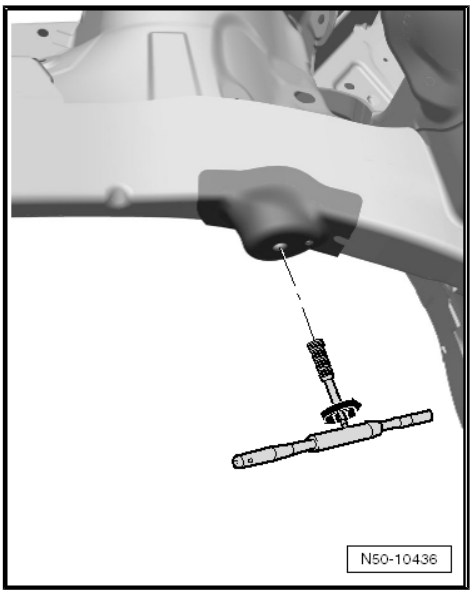
– Turn the threaded insert -3- onto the spindle until the drive peg -2- makes contact on drive tab -1- of installing spindle.

Note

Thread insert must be able to be turned easily.



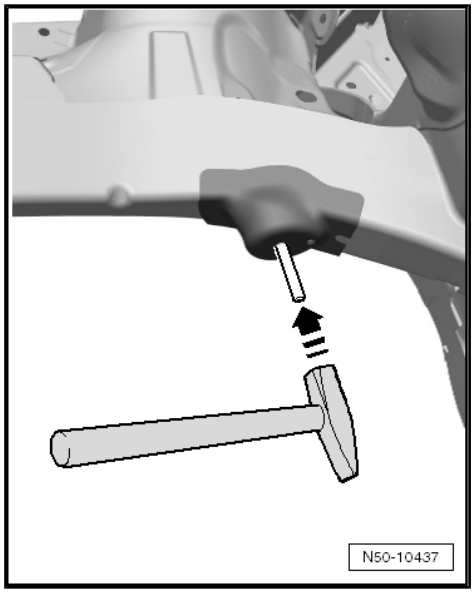
– Screw the threaded insert into the threaded plate until the threaded insert is seated flush with the outer edge of the threaded plate (check visually).
– Then tighten the threaded insert by a $^{1}/_{4}$ turn further.
– Remove the spindle.



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– Break off thread insert driver tang using tang breaker.

– Install the subframe (suspension subframe) (tightening specifications), refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe, Stabilizer Bar and Control Arm .



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RO: 50 79 55 00

8 Front Longitudinal Member, Replacing

Includes: Bumper Carrier

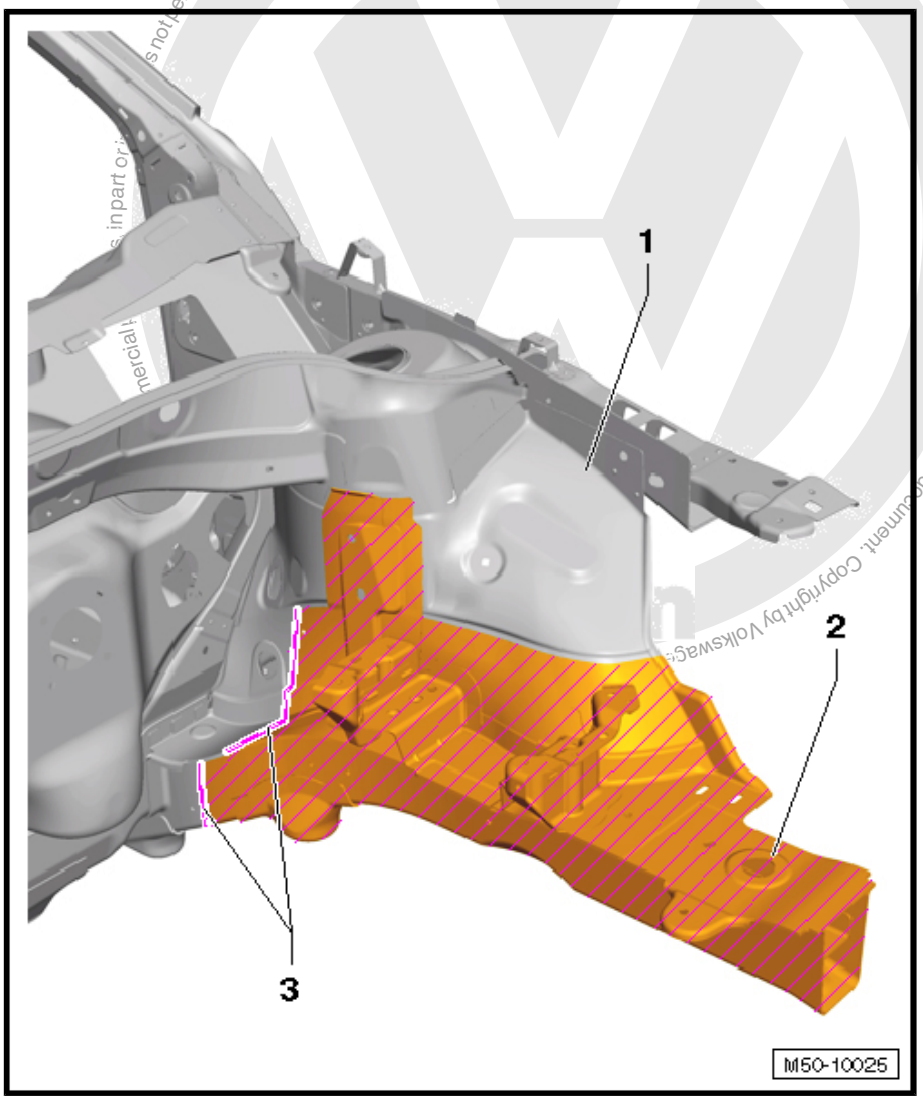
> **WARNING**
>
> ***Follow all safety precautions.***

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Wheel Housing

2 - Longitudinal Member With Cover Plate

3 - Cover Plate And Longitudinal Member Separation Cut



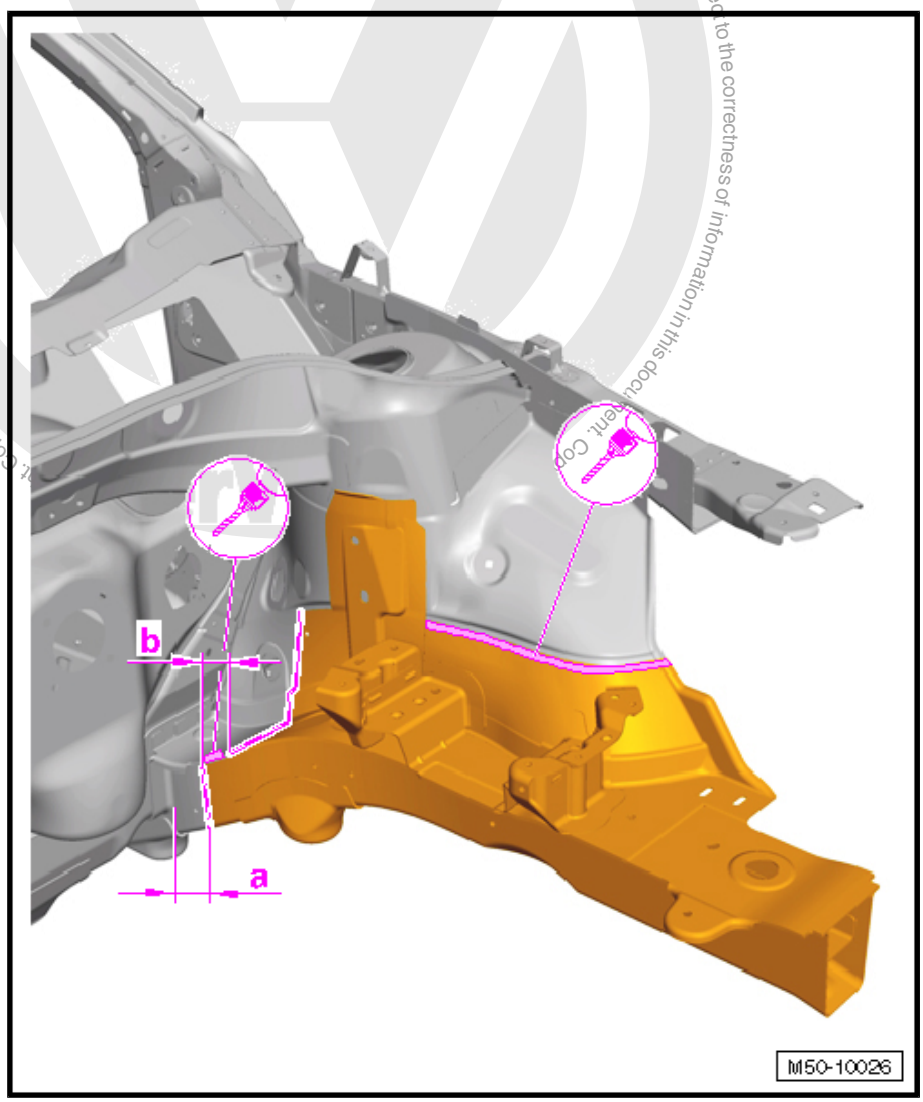
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8.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

8.2 Removing



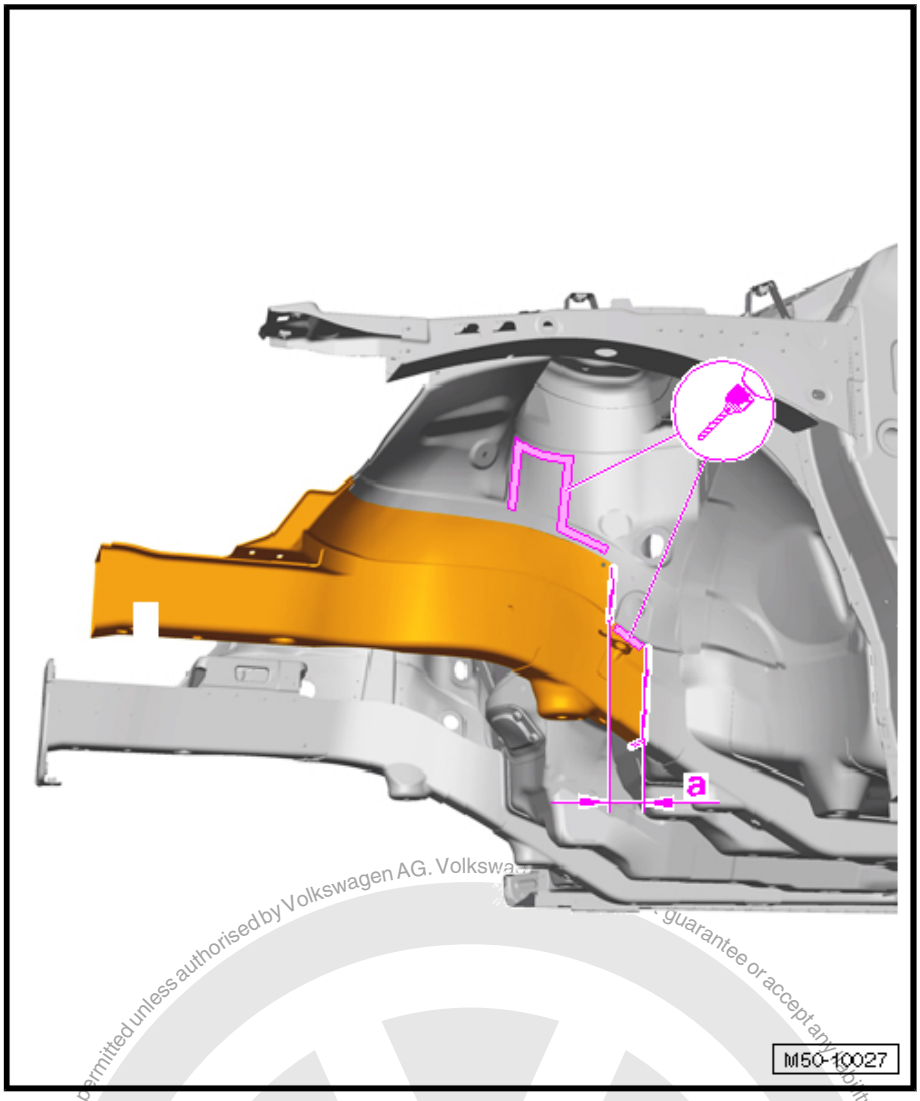
– Separate original joint to wheel housing.

– Make the separation cuts at an offset -b- on the longitudinal member and on the cover plate as shown.

Dimension -a- 50 mm

Dimension -b- 50 mm.

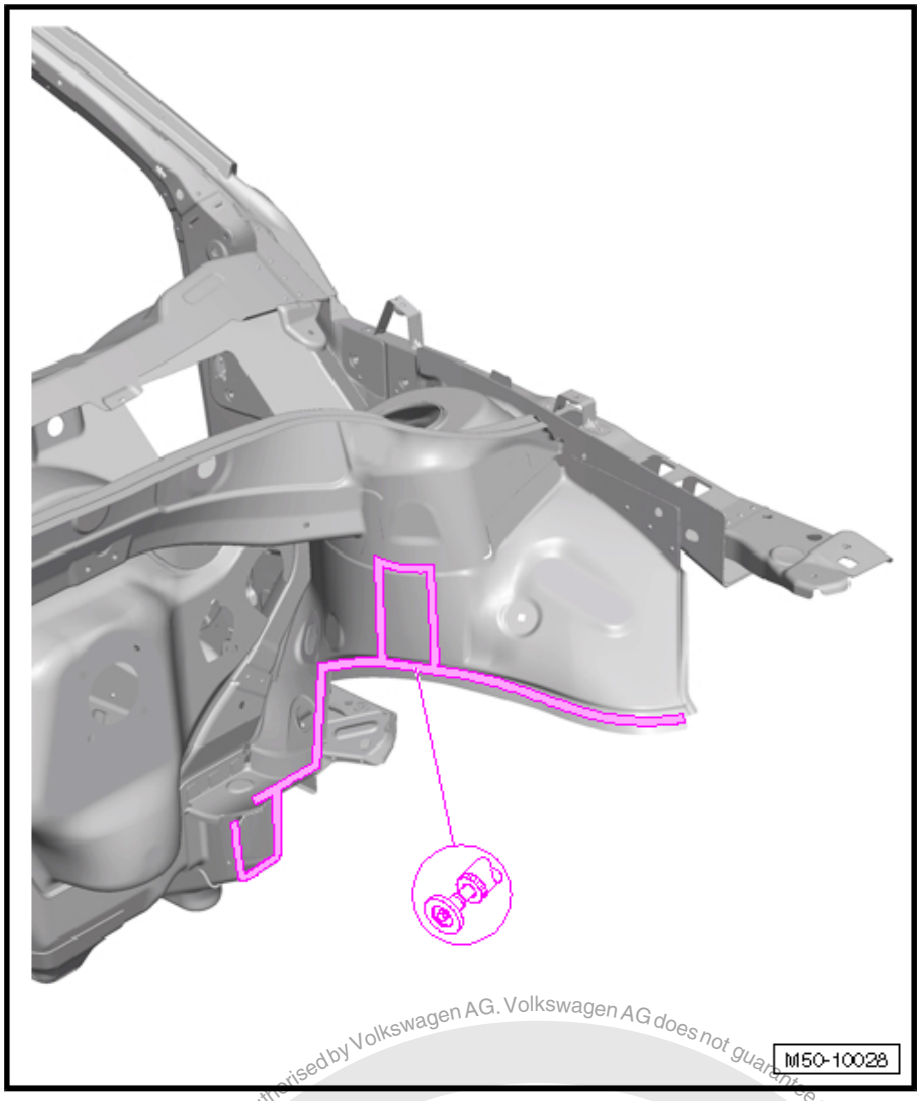
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– Separate original joint to wheel housing.
– Make the separation cuts at an offset on the longitudinal member and on the cover plate as shown.

Dimension -a- 50 mm

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– Remove residual material.

8.3 Installing

Note

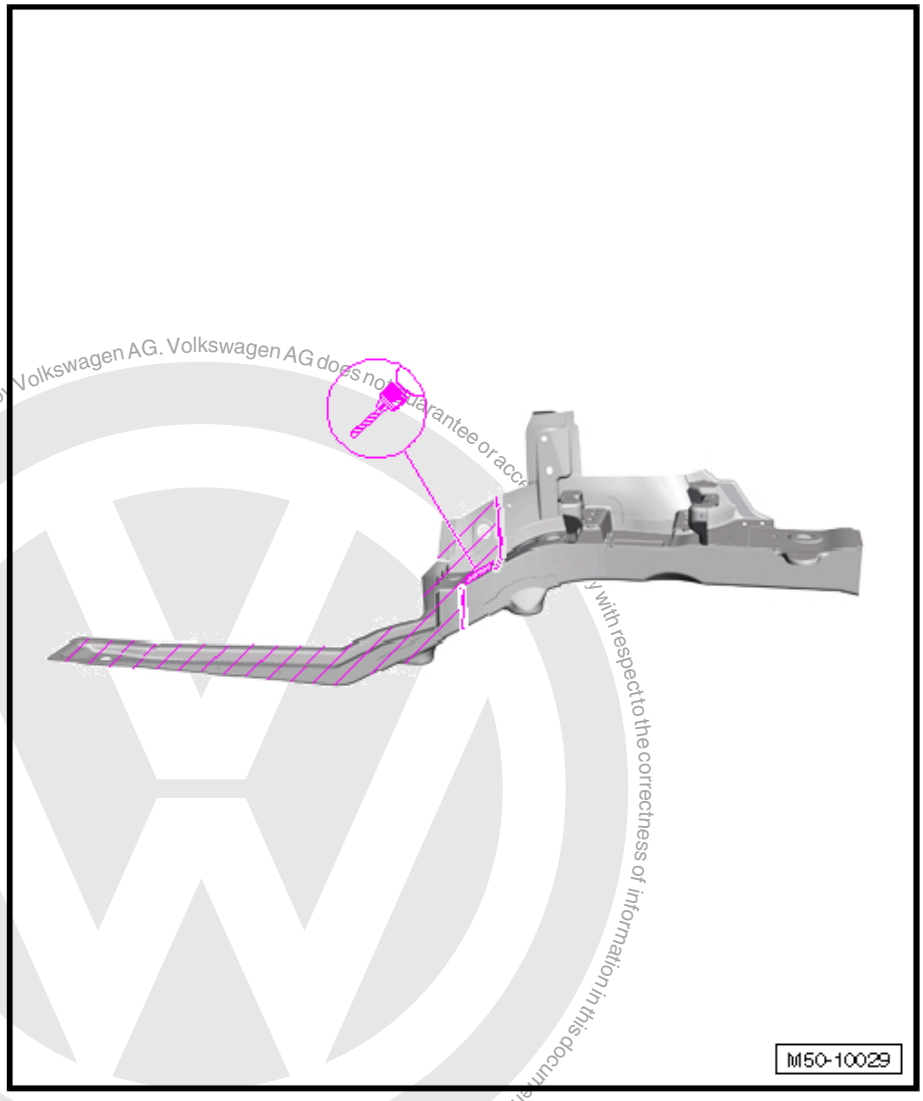
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "8.1 Tools", page 82 .

8.3.1 Preparing New Parts

New Part

- Longitudinal Member

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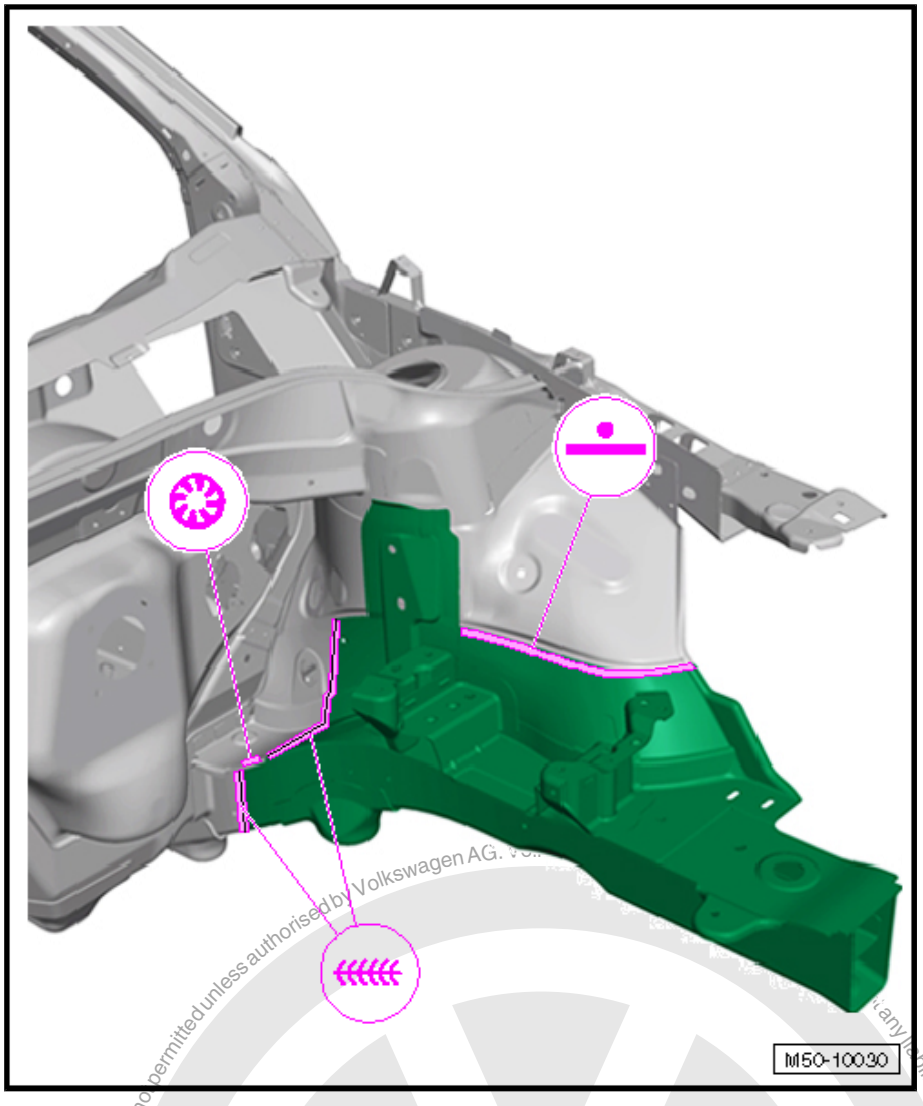


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– Transfer separating cuts onto new part and cut to shape.
– Loosen the original joint between the longitudinal member and the cover plate.

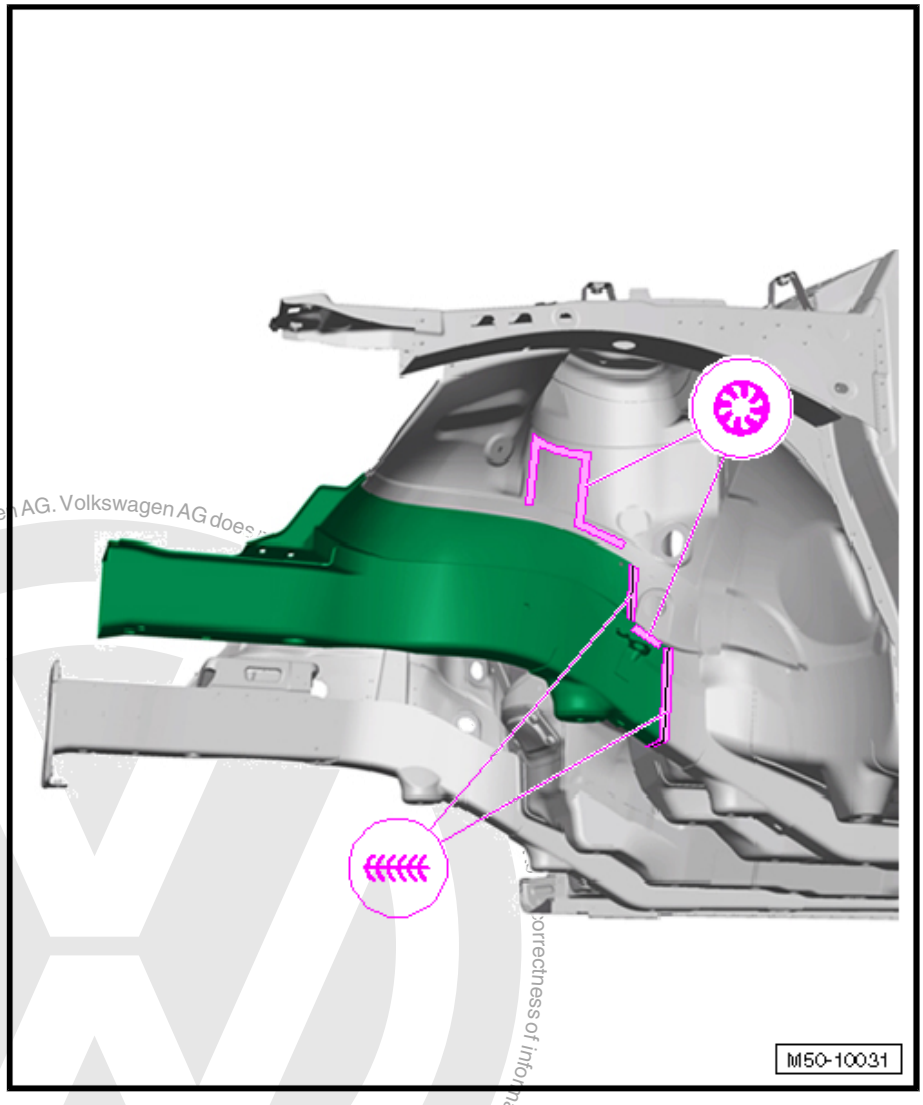
8.3.2 Welding

– Fit new part to vehicle standing on Straightening Bracket Set and secure.
– Check fit with neighboring components.



- Make the wheel housing joint with a straight-line spot weld seam.
- Weld the longitudinal member separating cut along the circumference, gas shielded arc continuous seam.
- Weld the separation cut on the cover plate using a gas-shielded arc continuous weld seam and gas-shielded arc plug weld seam.

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– Make the connection to the wheel housing with a gas-shielded arc plug weld seam.
– Weld the longitudinal member separating cut along the circumference, gas shielded arc continuous seam.
– Make the connection the cover plate using a gas-shielded arc continuous weld seam and gas-shielded arc plug weld seam.
– Install the front bumper bracket, refer to ⇒ “4.3 Installing”, page 56 .

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RO: 50 79 55 03

9 Front Longitudinal Member, Replacing Partial Section

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Cover Plate

Note

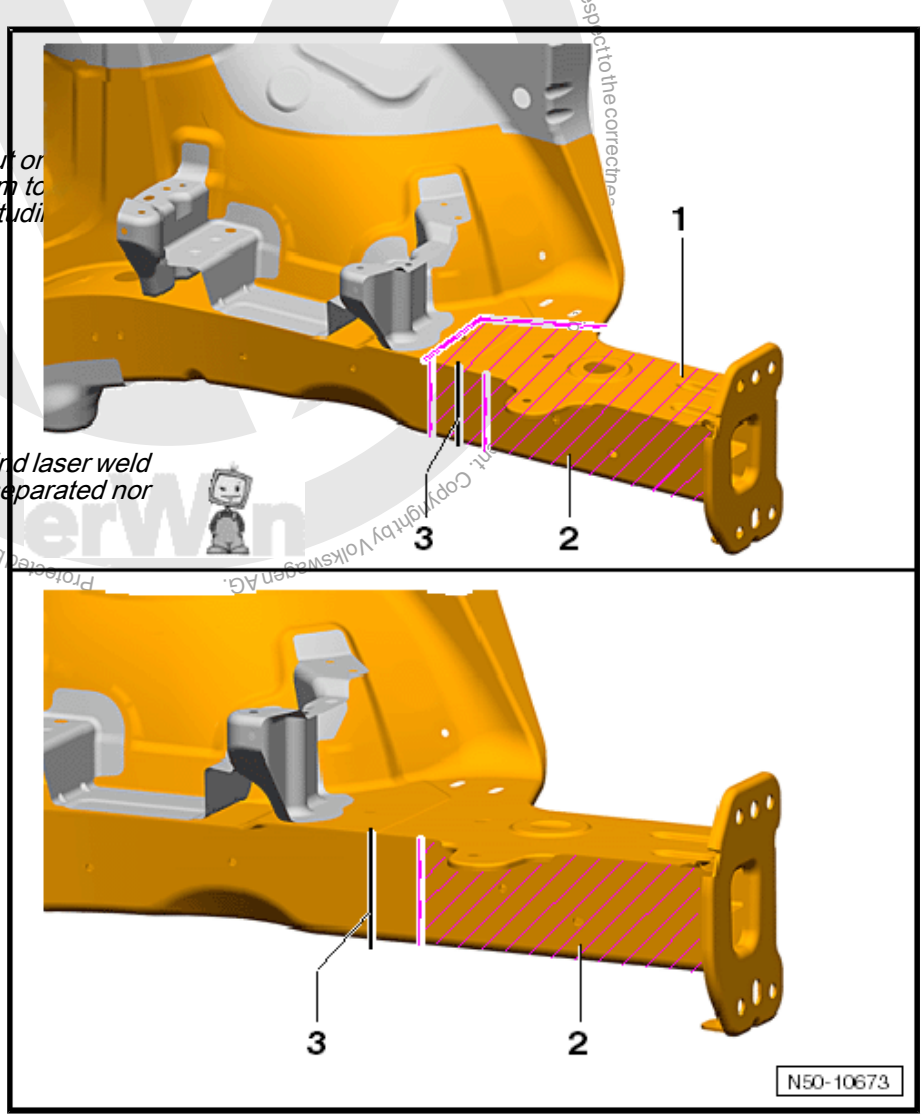
*Make the separation cut or
er plate offset by 50 mm to
aration cut on the longitudi
ber.*

2 - Longitudinal Member

3 - Laser Seam

Note

50 mm before and behind laser weld seam -3- must not be separated nor welded.



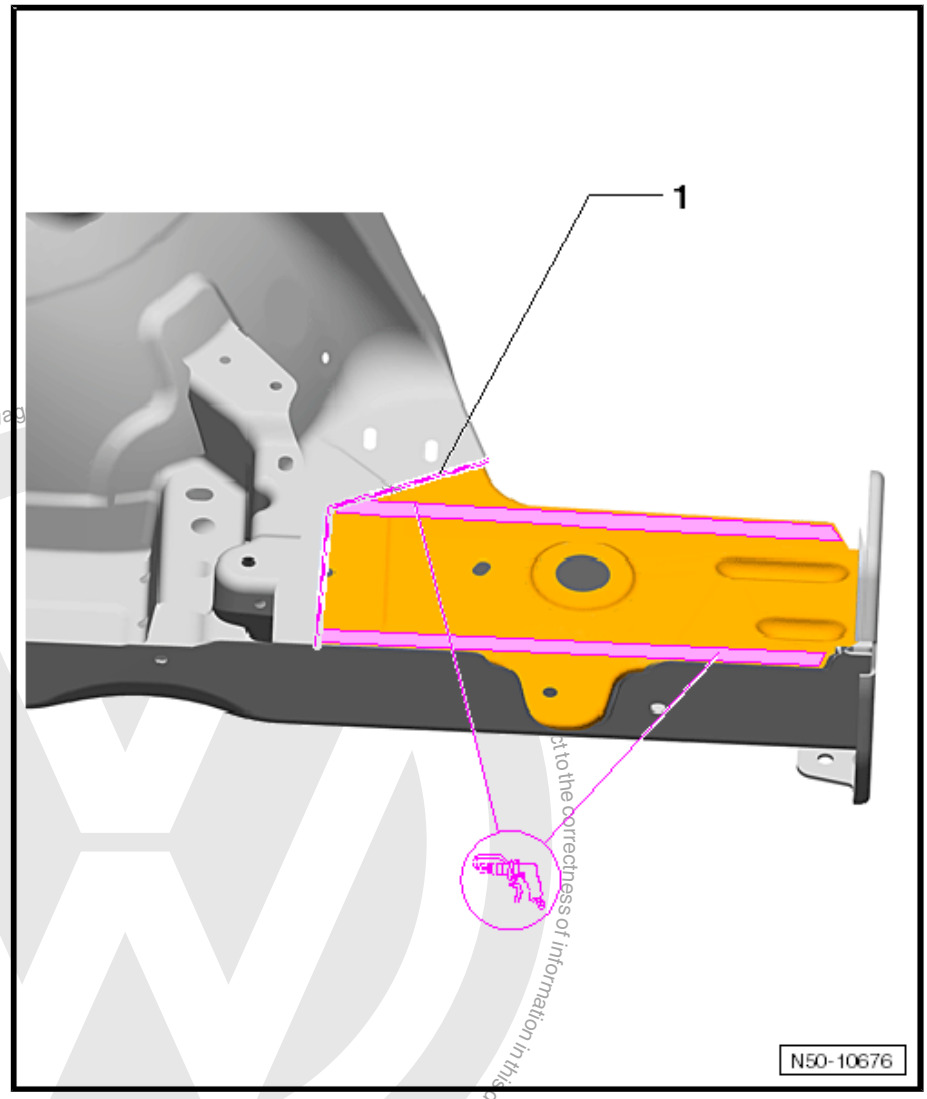
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9.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

9.2 Removing

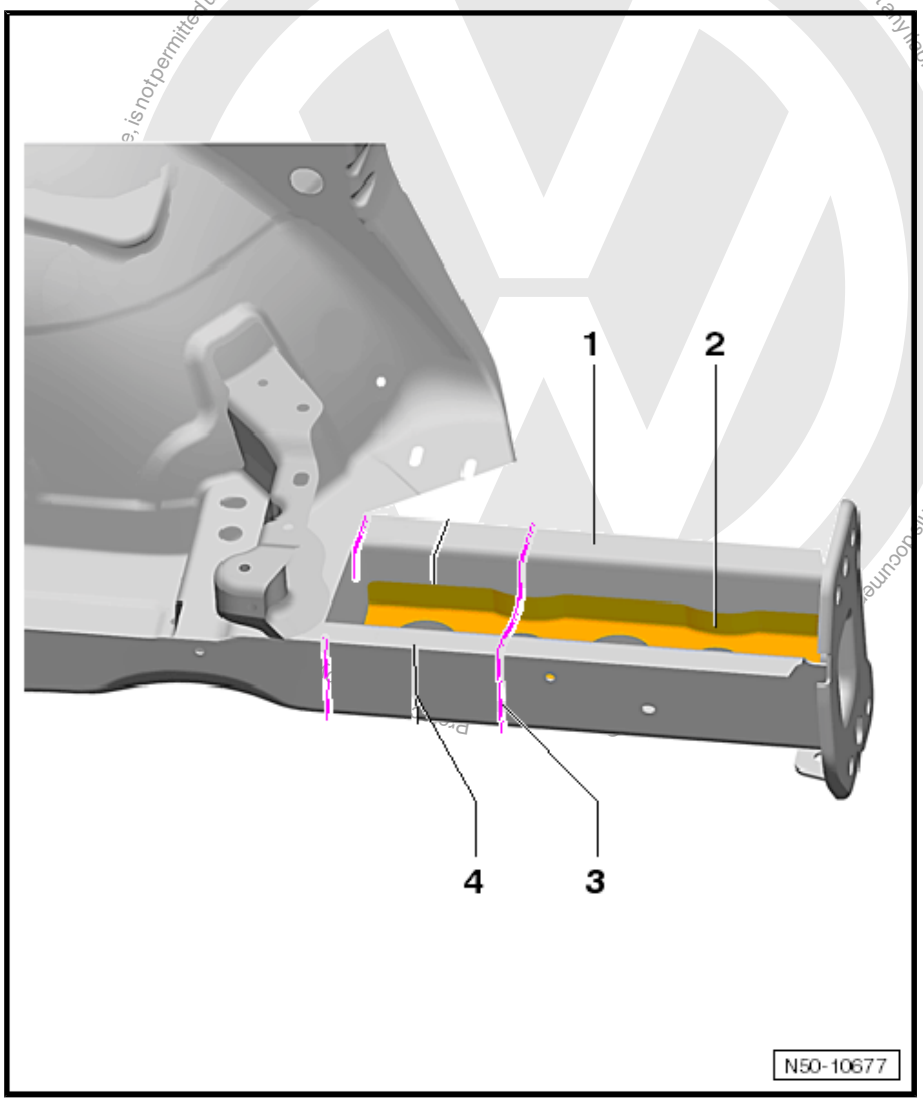


– Make the separation cut -1- on cover plate as illustrated.
– Separate the original joint.
– Remove the cover plate.

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Note

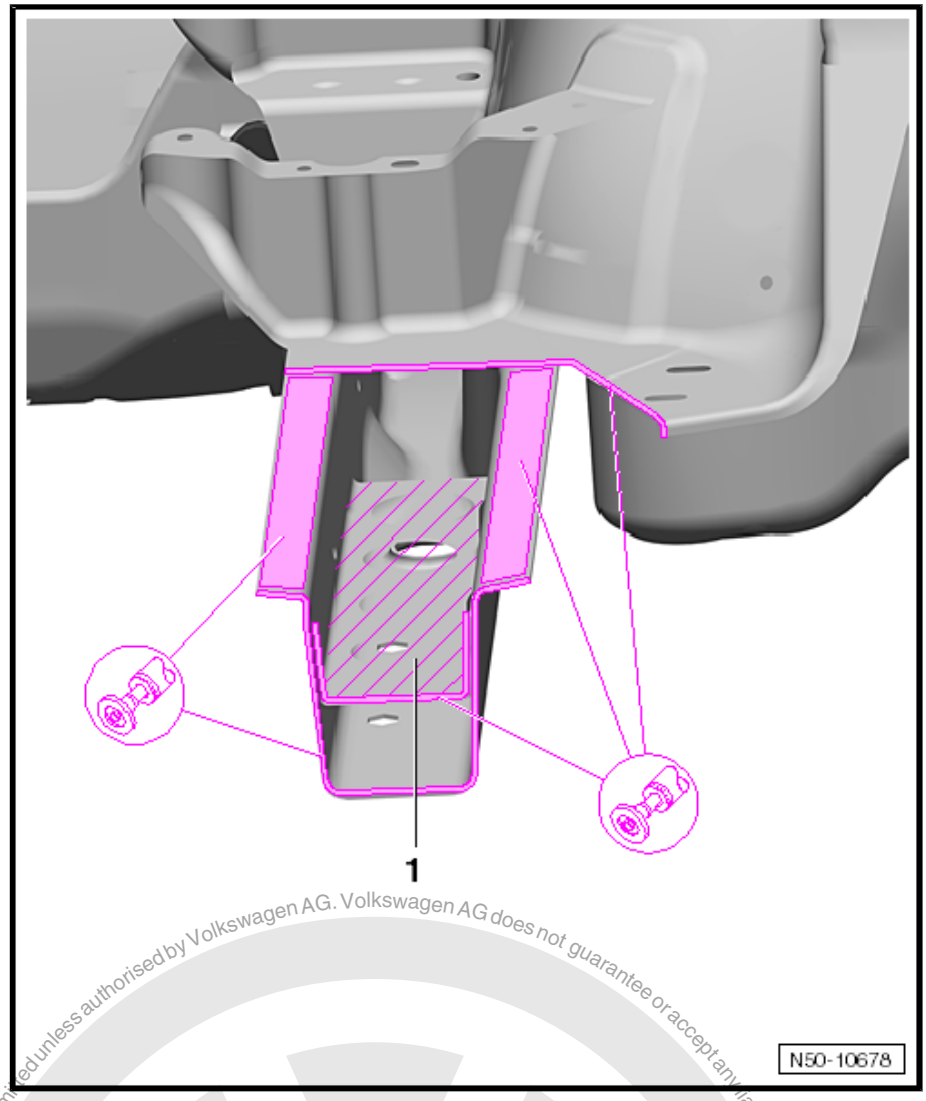
- *This separating cut is permissible only in the specified area on the longitudinal member.*
- *Replace the entire longitudinal member if it is damaged further, refer to* *⇒ "8 Front Longitudinal Member, Replacing", page 81* .



– Make the separation cut -3- and the longitudinal member -1- and on the reinforcement -2- so that they align.

Note

50 mm before and behind laser seam -4- must not be separated nor welded.



– Remove the remaining pieces and the rest of the longitudinal member reinforcement -1 shaded area-.

9.3 Installing

Note

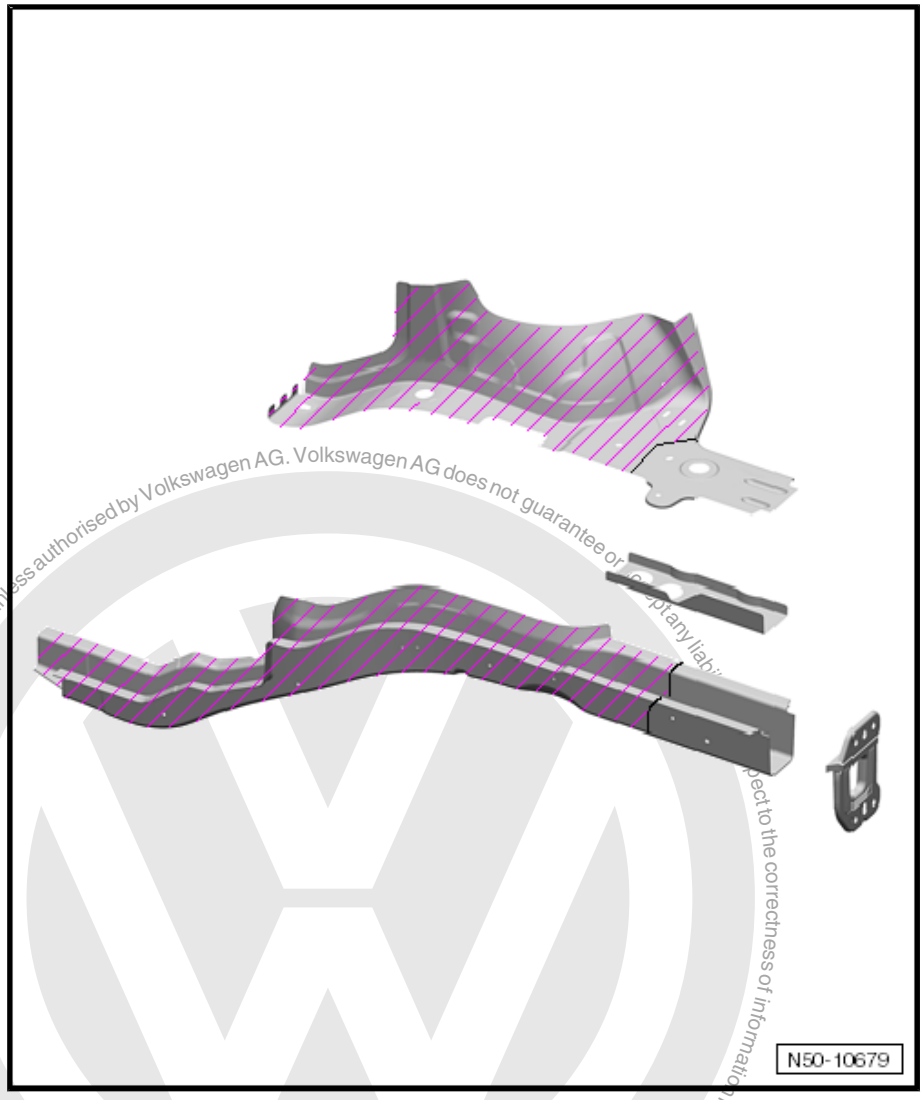
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "9.1 Tools", page 89

9.3.1 Preparing New Parts

New Part

- Longitudinal member (sub-part)
- Cover plate for longitudinal member
- Longitudinal member reinforcement (replacement part name: partition plate)
- Front bumper bracket

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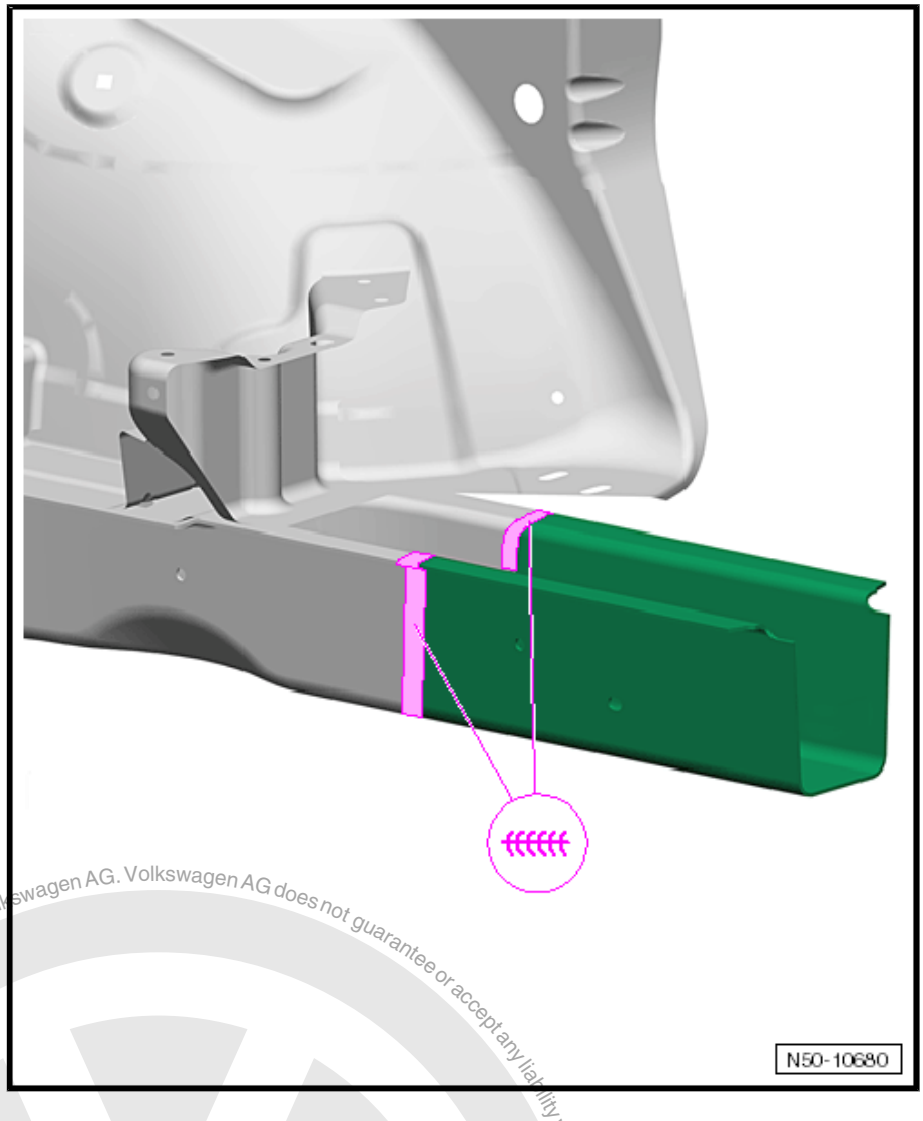
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– Transfer the separating cuts to the longitudinal member and the longitudinal member cover plate and cut.

9.3.2 Welding

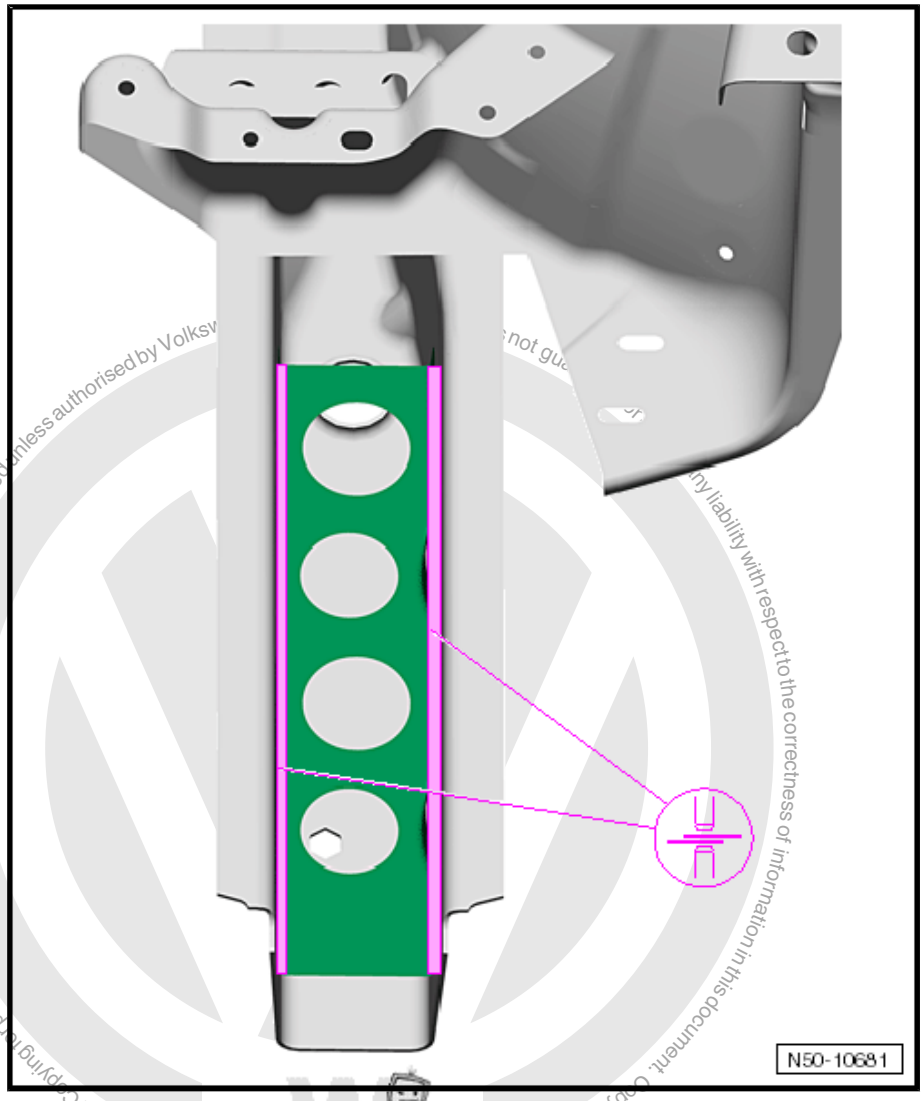
– Align and secure new part with vehicle standing on wheels or alignment bracket set.

– Check fit with neighboring components.



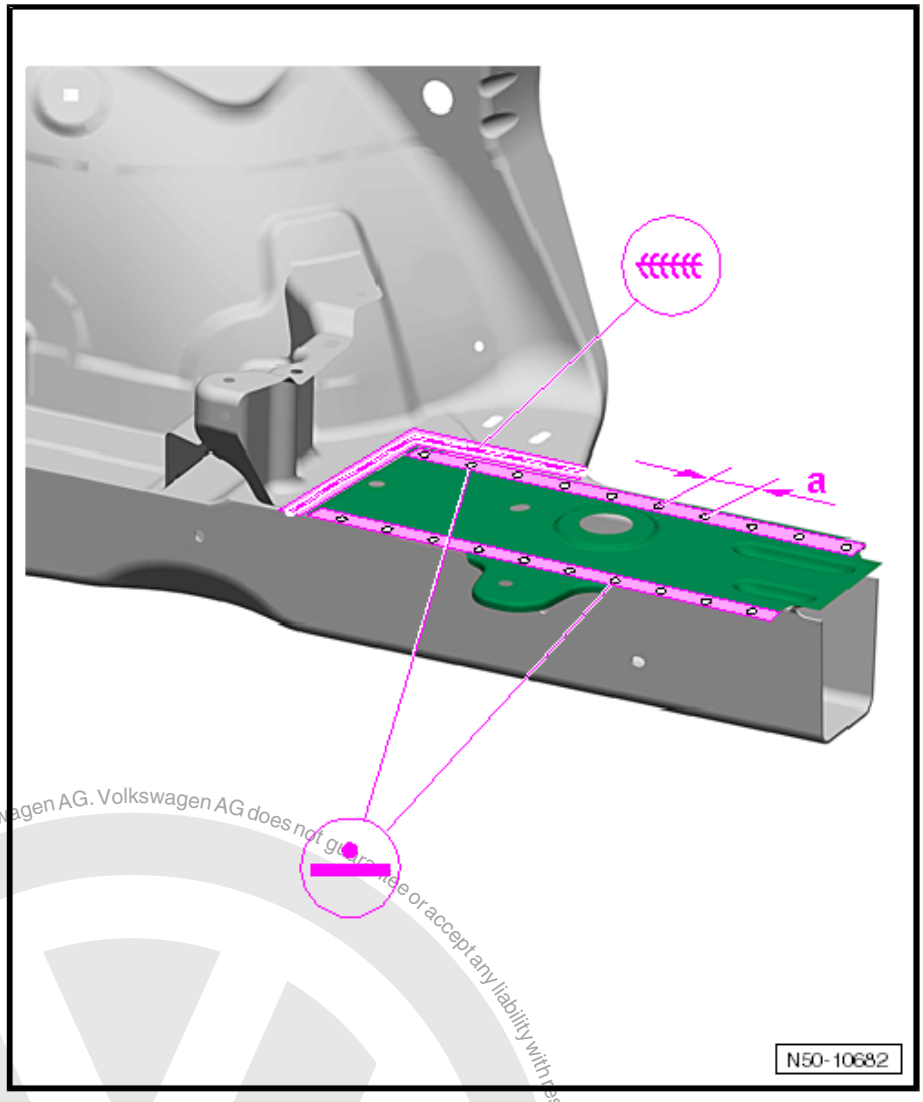
– Weld longitudinal member separating cut along circumference, gas shielded arc continuous seam.

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– Weld the longitudinal member reinforcement with a straight-line spot weld seam.

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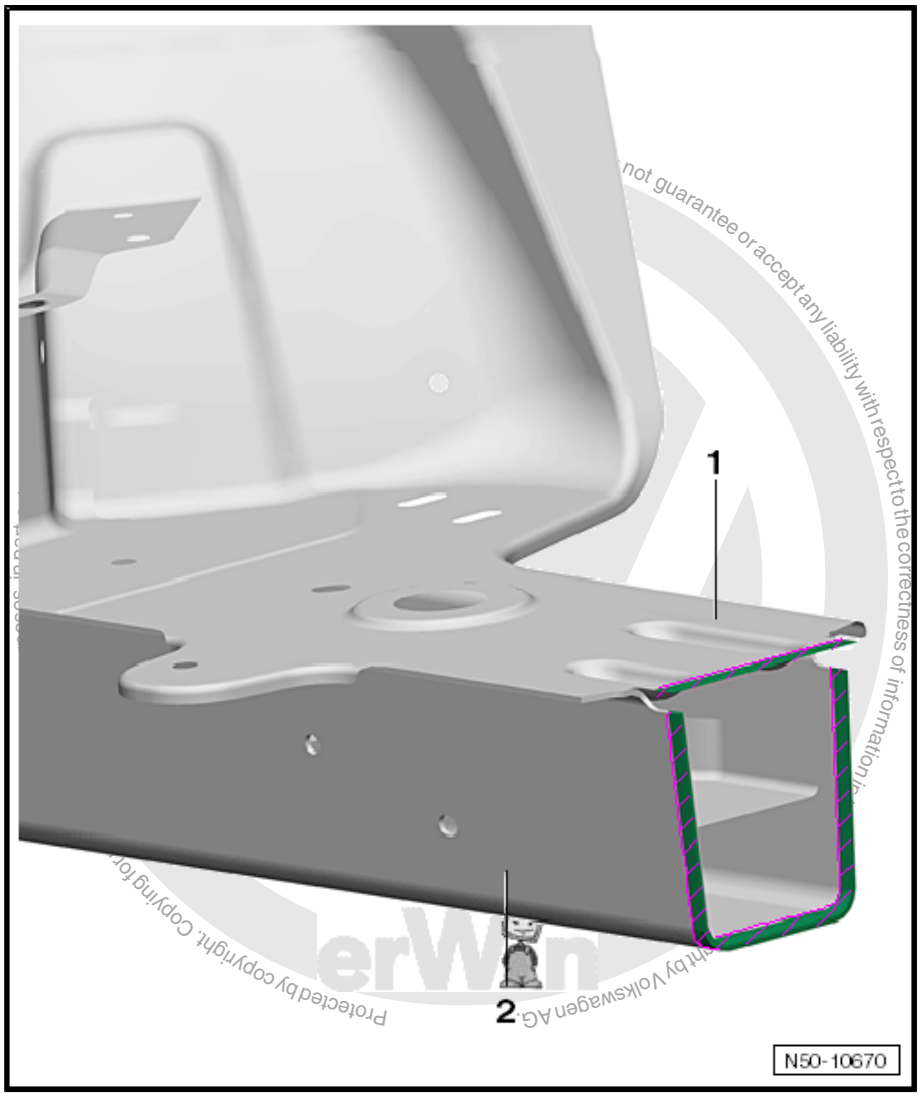
Note

Distance of welding points -a- approximately 35-40 mm.

– Weld the cover plate separation cut using a gas-shielded arc continuous weld seam.
– Weld the cover plate using a straight-line spot weld seam.

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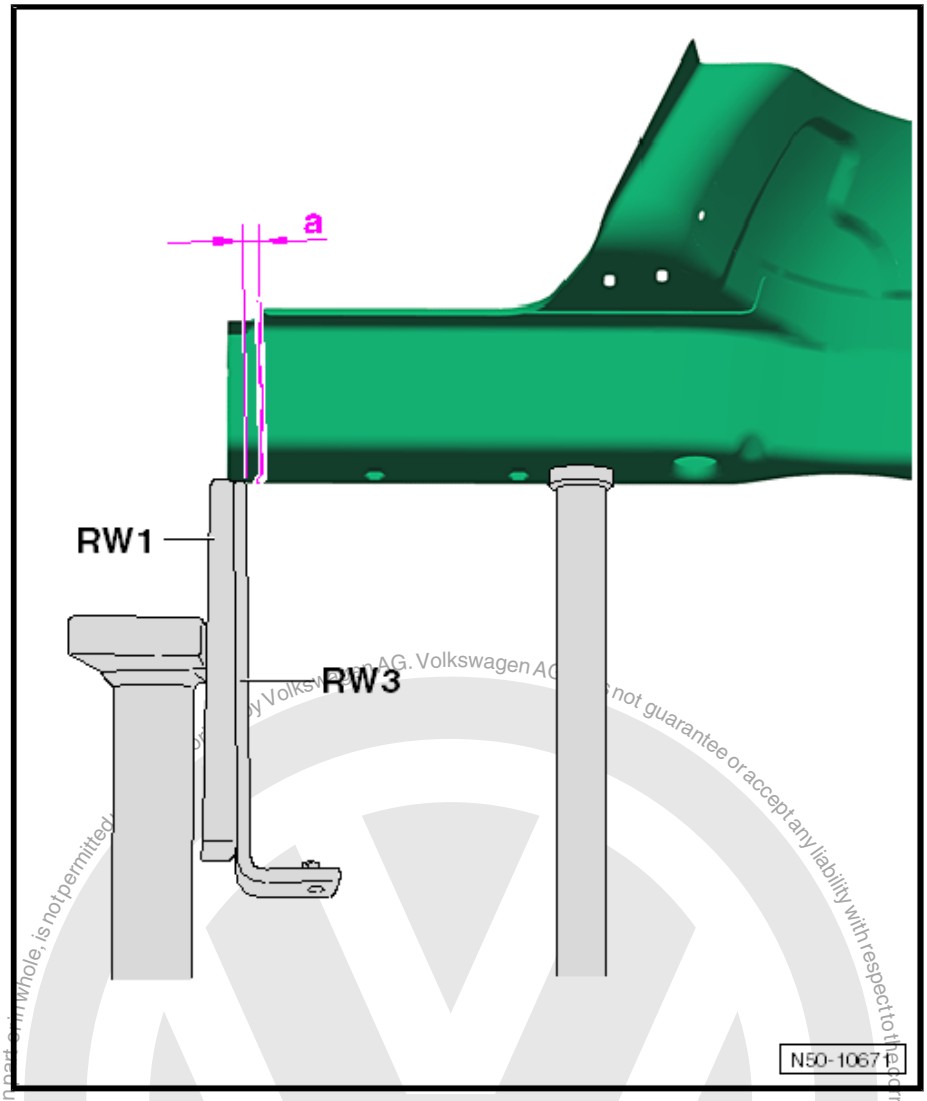
9.3.3 New Longitudinal Member Part with Cover Plate, Shortening



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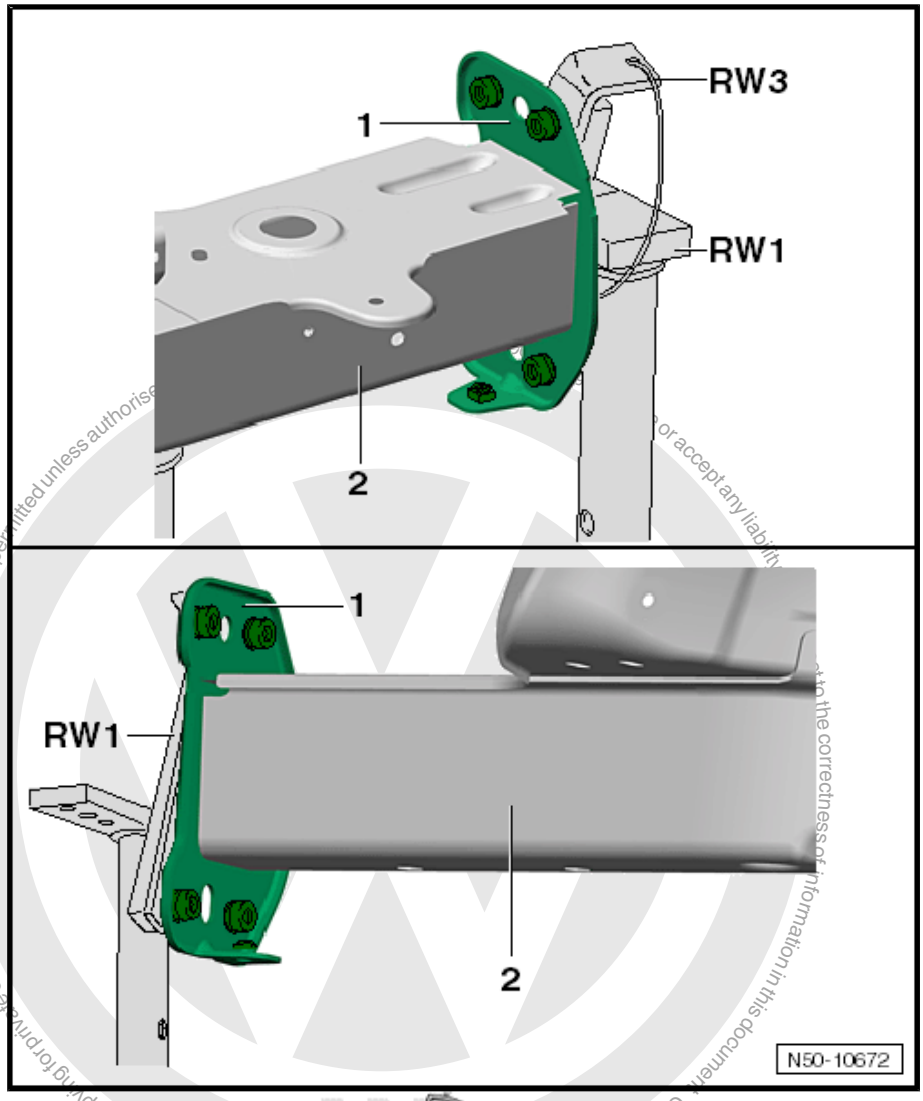
Note

The longitudinal member -2- with cover plate -1- (replacement part identification: longitudinal member) is too long in front area -cross-hatched area- and must be shortened to fit and weld in the front bumper bracket.



– Assemble alignment bracket for front longitudinal member -RW 1- with spacer plate -RW 3- and from below, hold at longitudinal member as shown.
– Transfer the transfer scribe dimension plus 2 mm excess -a- onto the longitudinal member and cover plate and cut off surplus material.

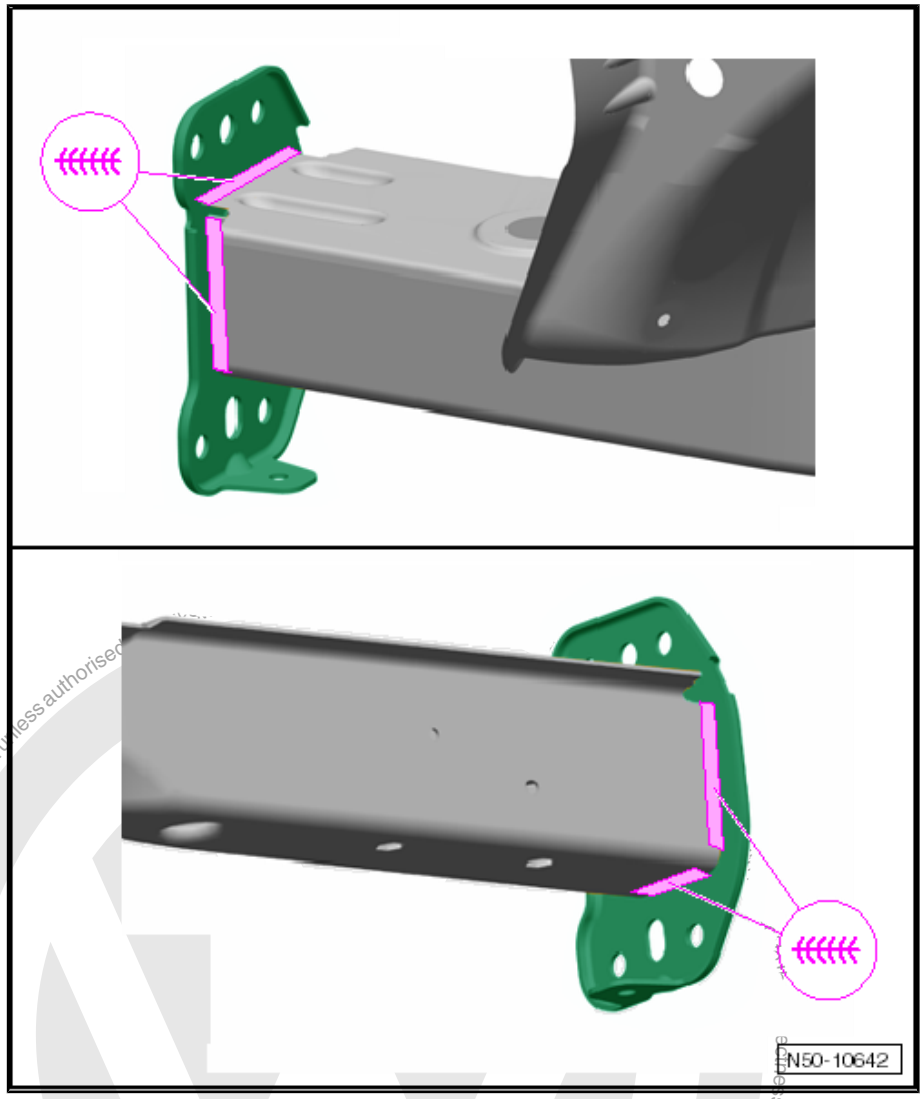
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– Secure front bumper bracket -1- using -RW 1- and -RW 3- in front of longitudinal member -2-.

Note

There must be a space of 1 mm to 2 mm between the longitudinal member with the cover plate -2- and the bumper bracket -1-.



– Weld in bumper bracket, gas-shielded arc continuous weld seam.

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RO: 50 79 55 13

10 Right Front Longitudinal Member, Replacing Partial Section

Includes:bumper bracket and longitudinal member reinforcement

Caution

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Cover Plate

2 - Cover Plate Separation Cut

Note

Make a separation cut on the cover plate, 30 mm offset to the separation cut on the longitudinal member -item 5- ⇒ Item 5 (page 100) .

3 - Longitudinal Member Reinforcement

Will also be partially replaced.

4 - Laser Seam

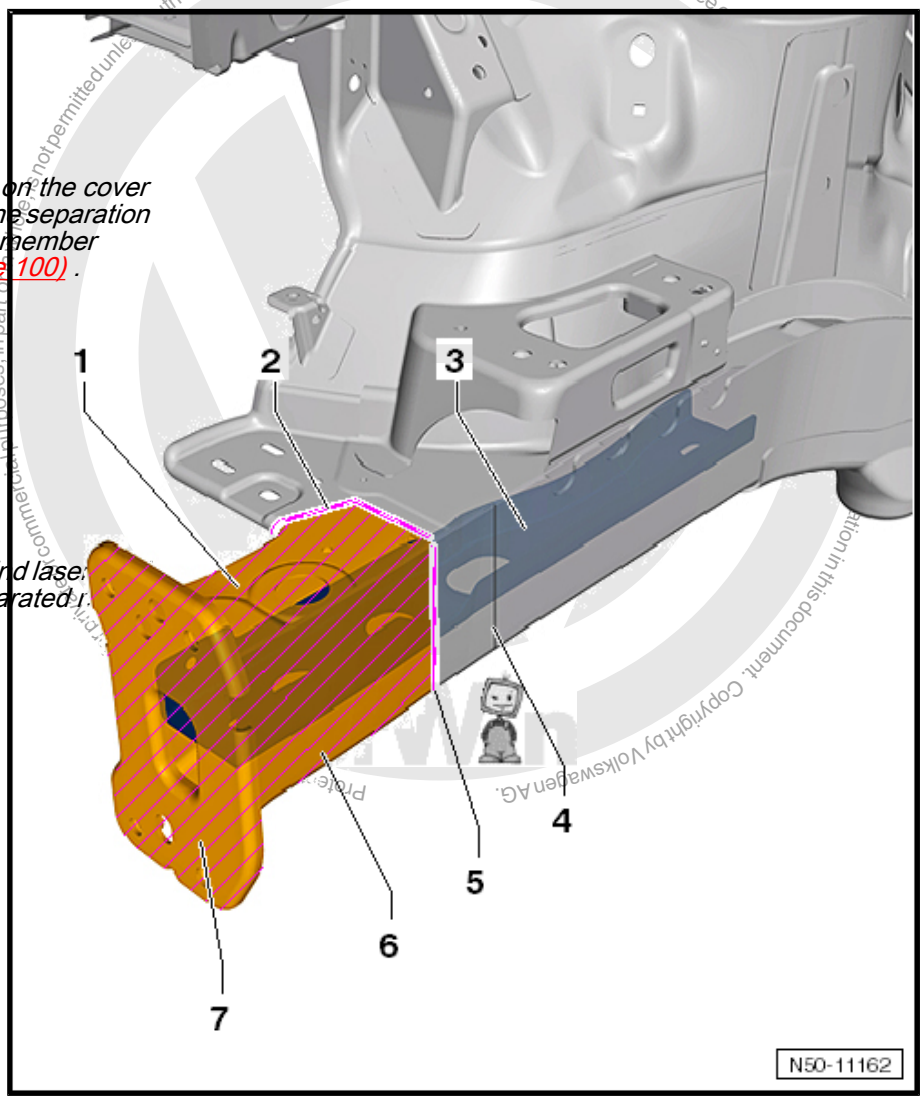
Note

40 mm before and behind laser seam must not be separated / welded.

5 - Longitudinal Member Separating Cut

6 - Longitudinal Member

7 - Bumper Bracket



10.1 Tools

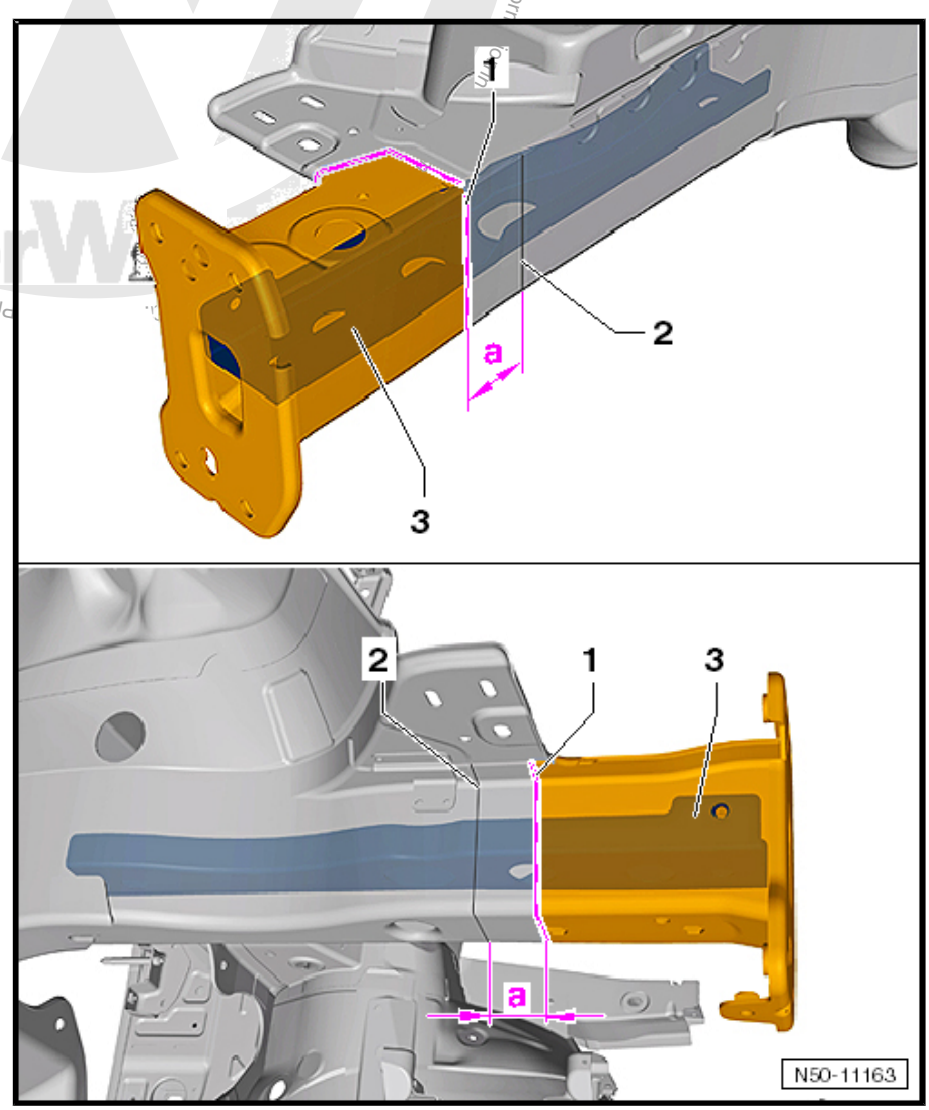
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

10.2 Removing

Note

- *This separating cut is permissible only in the specified area on the longitudinal member.*
- *Replace the entire longitudinal member if it is damaged further, refer to* ⇒ *"8 Front Longitudinal Member, Replacing", page 81* .

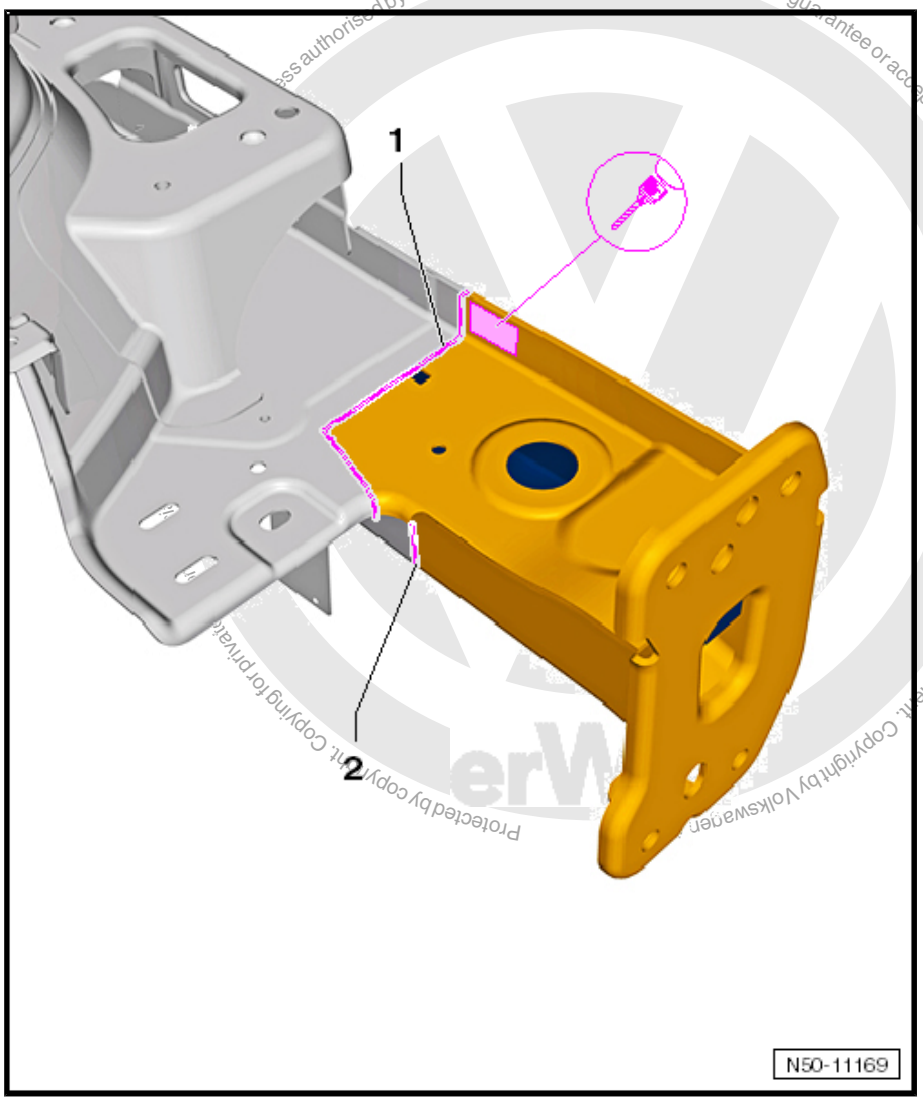


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– Make a separation cut on the longitudinal member -1- at a distance -a- to the laser seam -2-.

Dimension -a- = 40 mm

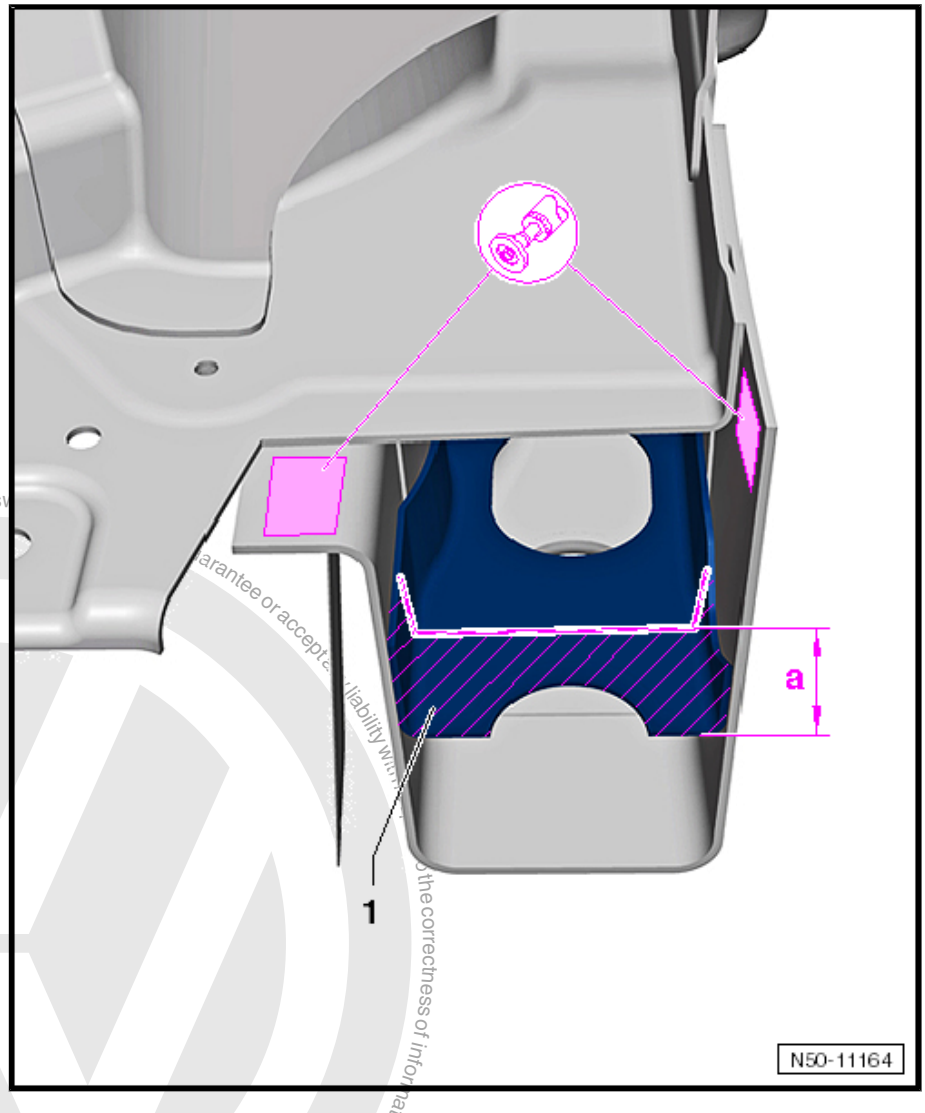
– Be sure to cut through the longitudinal member reinforcement -3- when making the separation cut on the longitudinal member.



– Make the separation cut on the cover plate -1- offset 30 mm to the separation cut on the longitudinal member -2-.

– Separate remainder of joint.

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– Shorten the longitudinal member reinforcement in the hatched area -1- by dimension-a-.

Dimension -a- = 25 mm

– Remove residual material.

10.3 Installing

Note

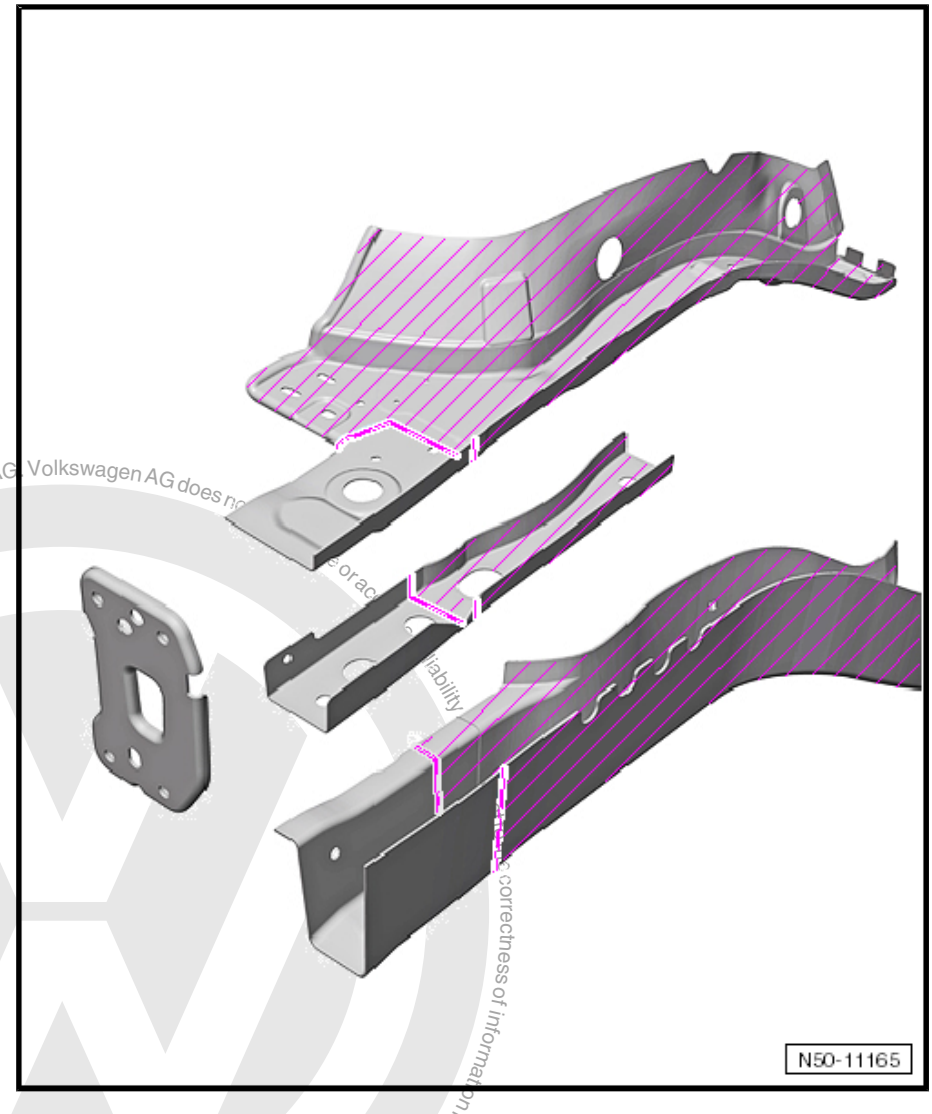
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "10.1 Tools", page 101 .

10.3.1 Preparing New Parts

New Part

- Longitudinal member (sub-part)
- Longitudinal member cover plate
- Longitudinal Member Reinforcement
- Front bumper bracket

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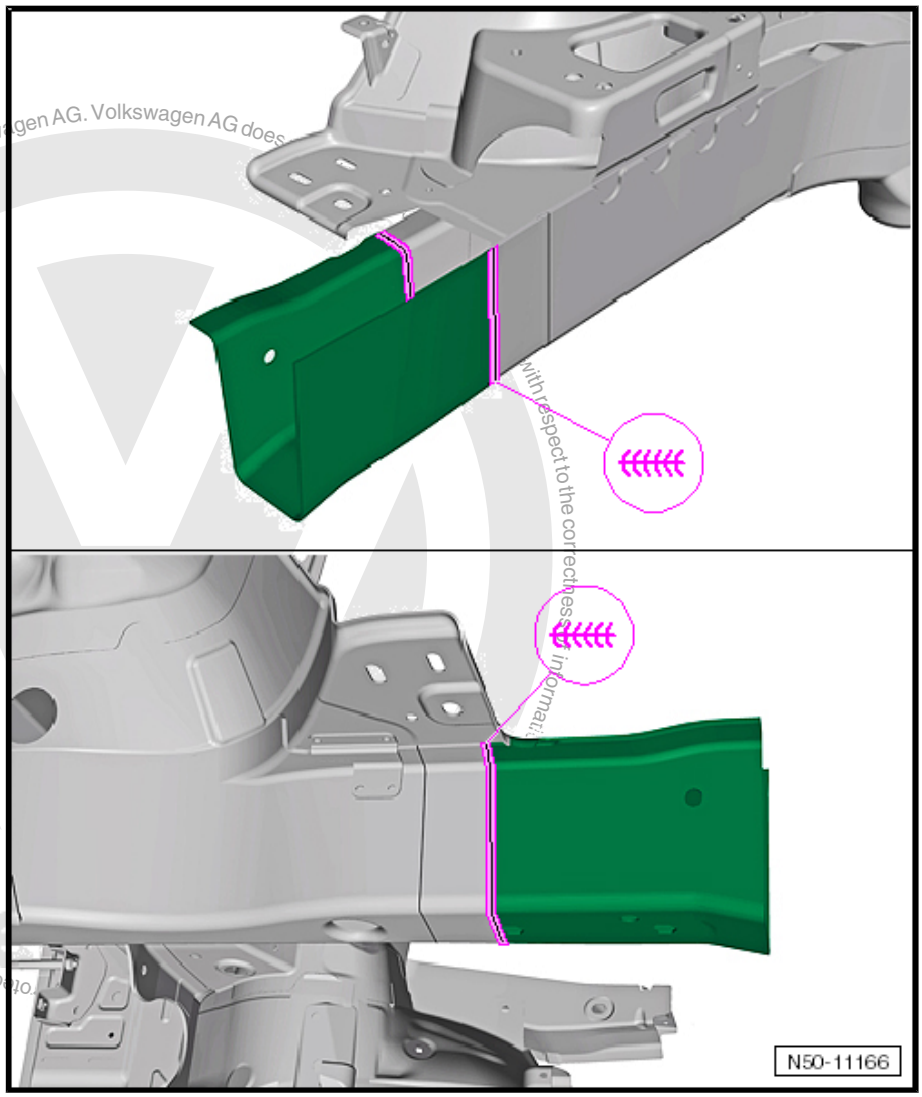
– Transfer separating cuts to new parts and cut.

10.3.2 Welding

– Fit new part to vehicle standing on Straightening Bracket Set and secure.

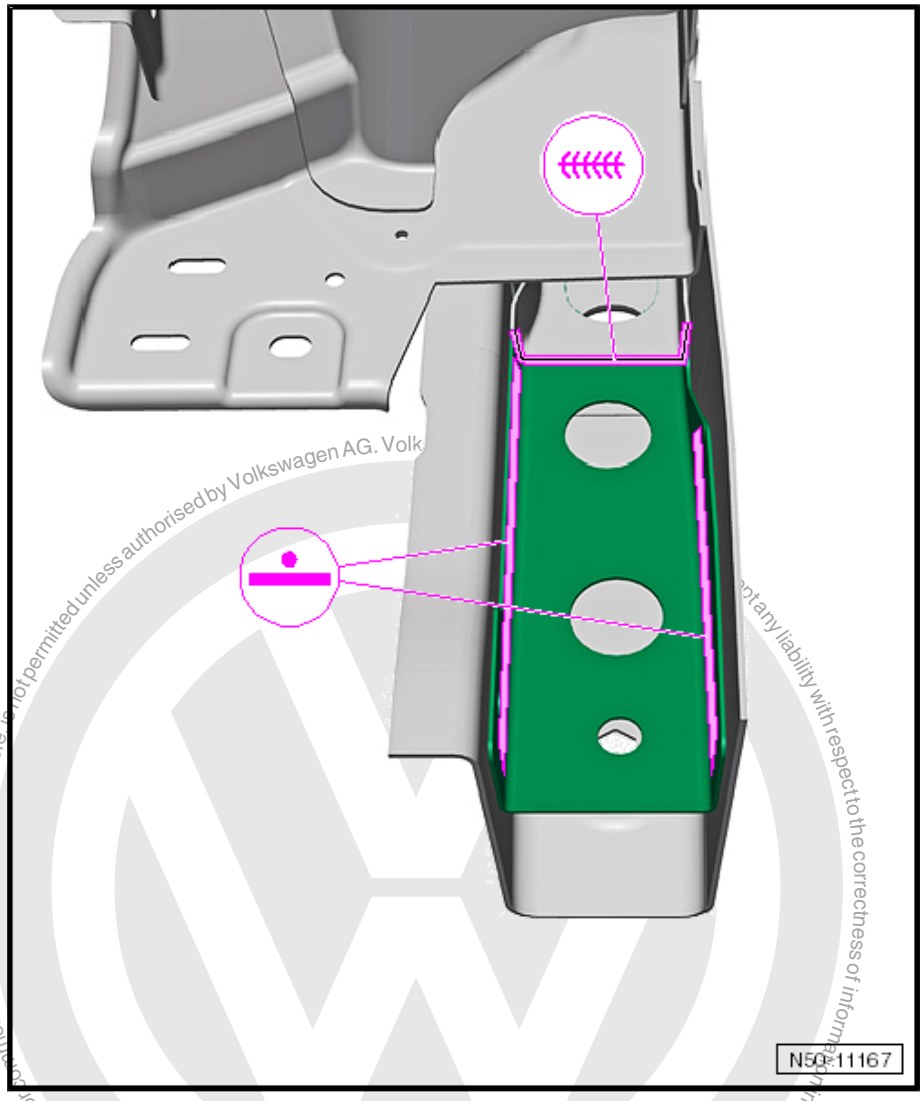
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– Check fit with neighboring components.



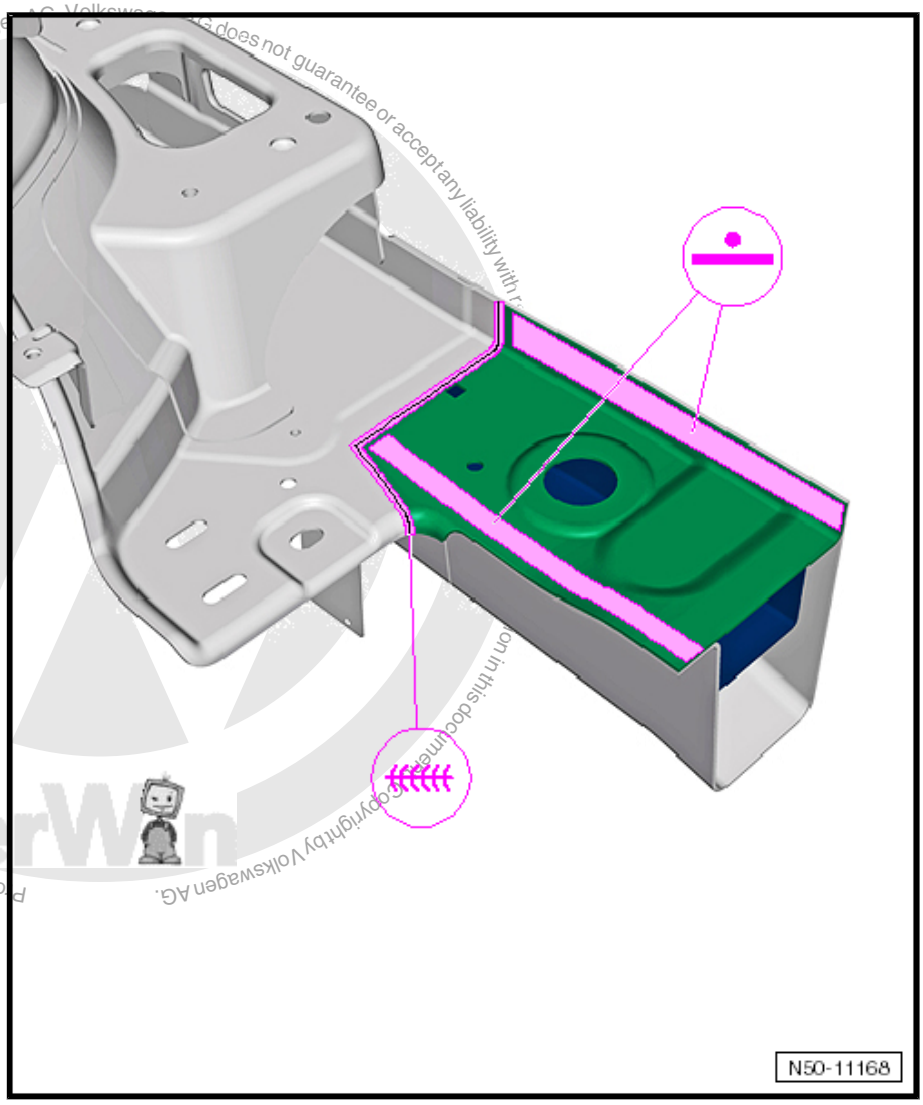
– Weld longitudinal member separating cut along circumference, gas shielded arc continuous seam.

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– Weld the longitudinal member reinforcement with a straight-line spot weld seam.
– Weld the separating cut using a gas-shielded arc continuous weld seam.

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– Weld the cover plate using a straight-line spot weld seam.
– Weld the cover plate separation cut using a gas-shielded arc continuous weld seam.
– Shorten the new longitudinal member part with cover plate and weld in the bumper bracket, refer to ⇒ “9.3.3 New Longitudinal Member Part with Cover Plate, Shortening”, page 96 .

51 – Body Center, Chassis, Roof

RO: 51 03 55 00

1 Roof, Removing and Installing, Vehicles without Sunroof

WARNING

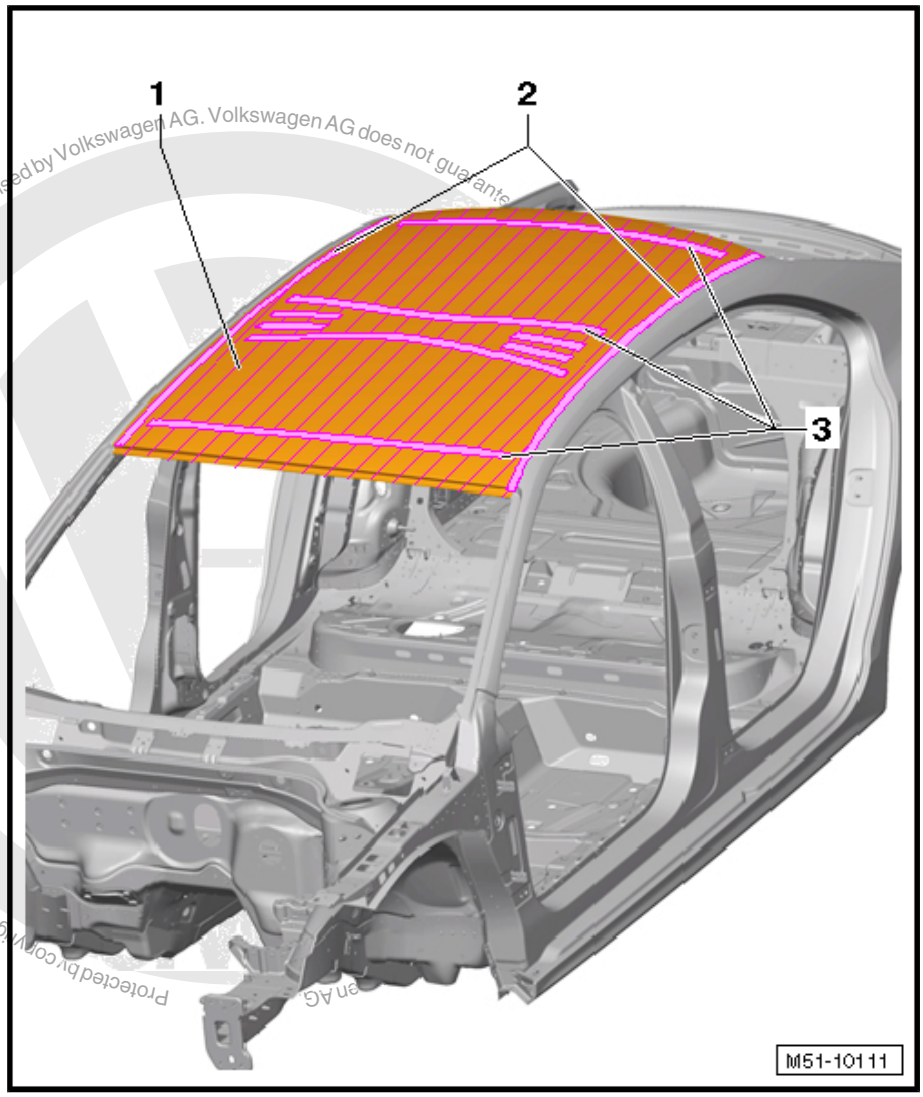
Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Roof

2 - Laser Brazed Seam

3 - Bonded Area



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1.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

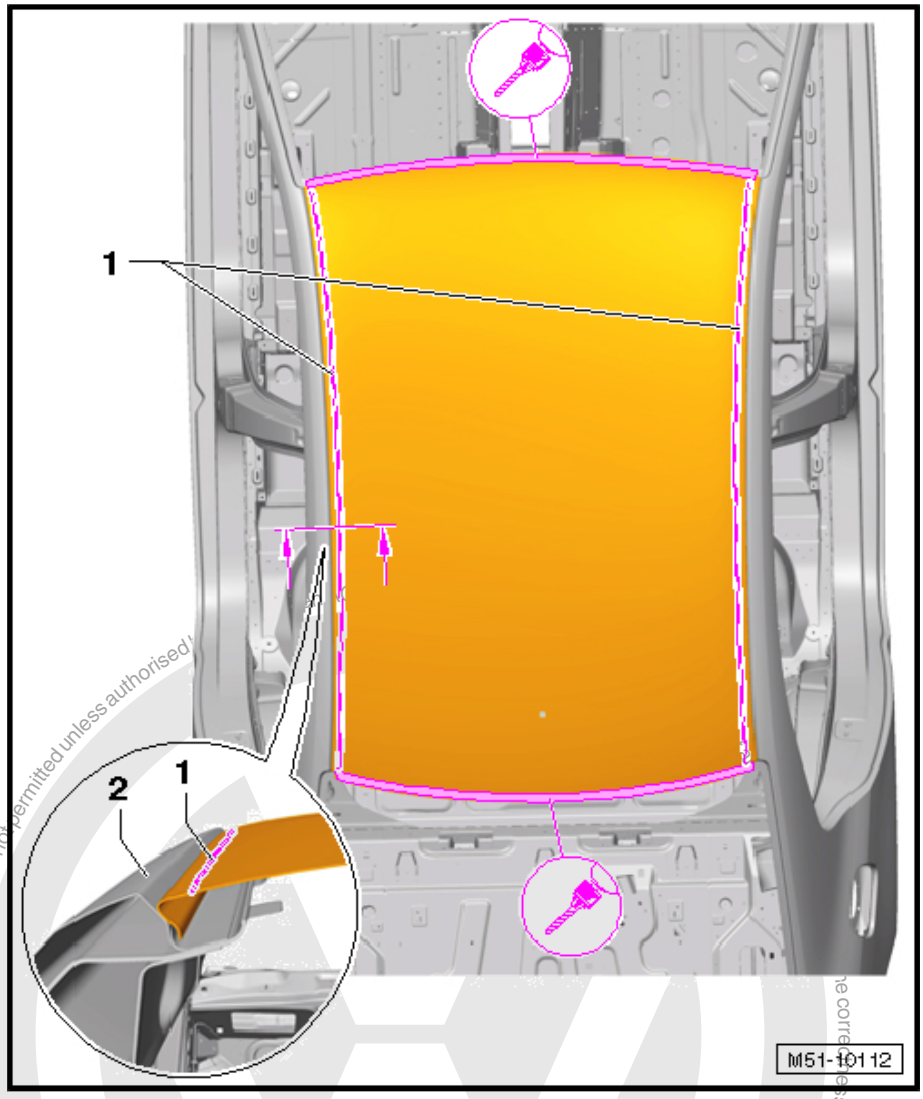
- Pneumatic Cartridge Gun - VAG1761/1-
- Cartridge Heater - VAG1939A-
- Double Cartridge Gun - VAS5237-
- Gauge - Gap Adjustment - 3371-
- Tensioning Strap - T10038-
- Double Suction Lifter - VAG1344-

1.2 Removing

Note

- *Apply cloth reinforced adhesive tape parallel to the laser brazed seams on the left and right side of the roof pillars. It prevents pillars from getting damaged or dirty while servicing.*
- *Maintain a distance of approximately 15 mm to the roof pillar -2- so that it does not get damaged.*
- *Be careful not to cut into the plates behind it when making the separation cuts.*

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Vehicles with Roof Reinforcement:

– Remove the bonded joint for the roof reinforcement.

All Vehicles:

– Loosen the front and rear original connection on the roof crossmember.

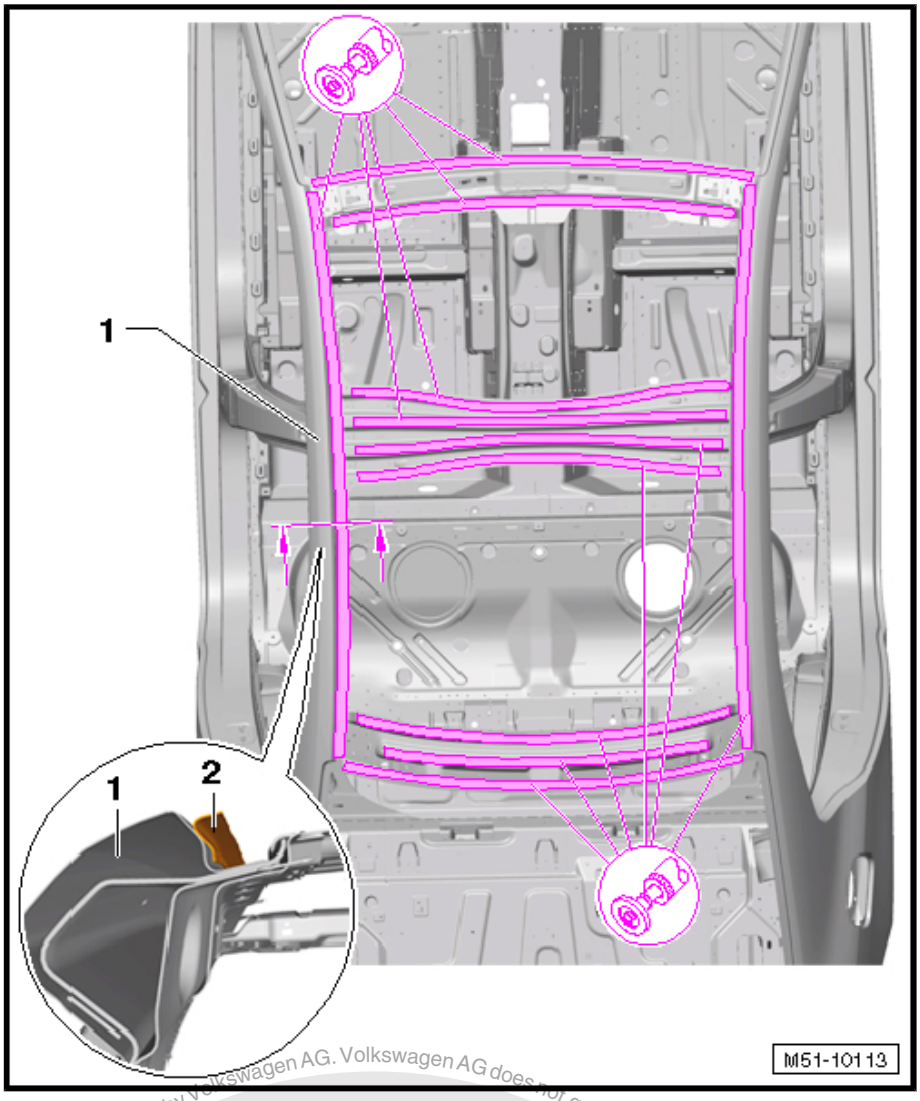
– Remove the bonded joint from the roof crossmember.

– Make the separation cuts -1- so that they are parallel to the laser brazed seams and then separate the roof.

Note

- *Be careful not to damage the roof pillar -1- when removing any remaining roof material -2-.*
- *Do not use separating- or roughing blades; use a Lamellar disc instead.*

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– Remove the remainder -2-.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.
– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
– Lightly sand the adhesive surfaces in the connection.

1.3 Installing

Note

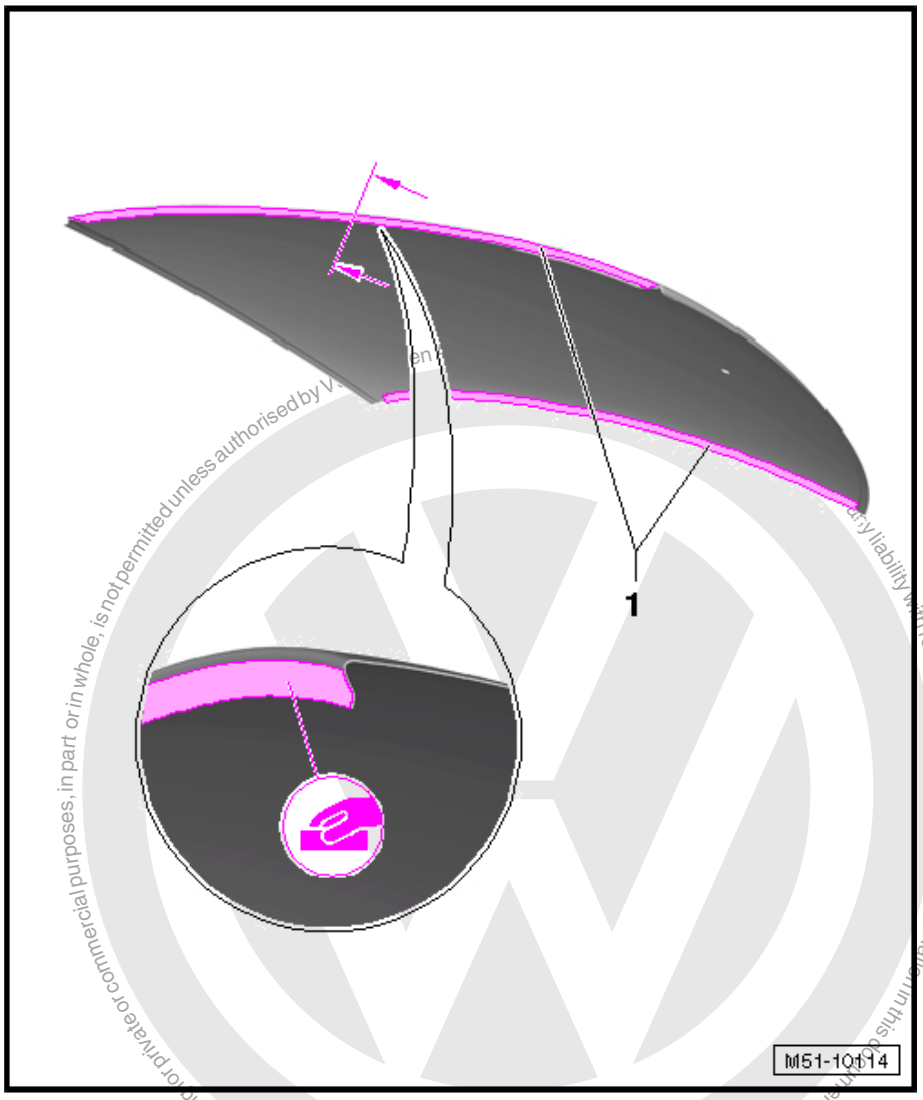
- *Use only welding equipment approved by Volkswagen AG, refer to ⇒ "1.1 Tools", page 109 .*
- *In order to guarantee problem-free and long lasting roof repair, the following work procedure must always be followed.*
- *Be sure to follow the work procedure exactly to prevent making any mistakes.*

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1.3.1 Preparing New Parts

New Part

- Roof
- 1K Assembly Adhesive - D 190 MKD A3- , (3 cartridges)
- 2K Body Adhesive - D 180 KD3 A2- (2 cartridge set)
- Adhesive - AKD 476 KD5 05-
- Felt - 533 867 910 B-
- Cavity Sealant - AKR 321 M15 4-



– Sand the left and right adhesive areas -1- on the roof down to the bare metal.

This ensures that the 2K Body Adhesive - D 180 KD3 A2- can achieve a good bond with the adhesive surfaces.

– Secure four Double Suction Lifter - VAG1344- on the outer side of the roof.

– Mount the roof onto the roof frame.

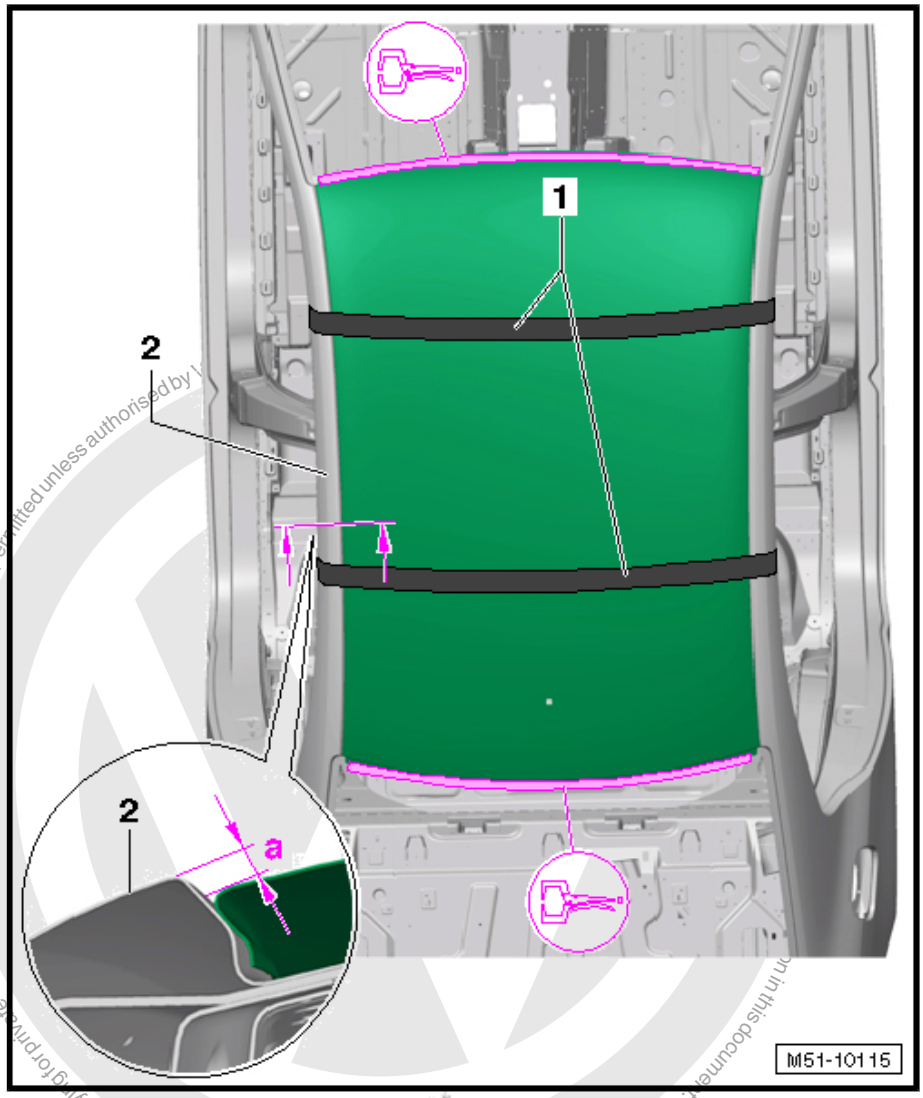
– Check how the roof fits with the windshield and the rear window.

ElsaWin
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1.3.2 Roof Depth Dimension, Adjusting

Note

- *The tensioning straps -1- prevent roof from lifting off the roof frame and sliding during the adhesive procedure.*
- *To prevent damage, do not overtighten the tensioning straps.*
- *Dimension -a- is determined by tightening or loosening the tension straps so that the roof is lower than the roof pillar -2-.*
- *Use the Gauge - Gap Adjustment - 3371- to check dimension -a-.*



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– Secure the roof to the openings for the front and rear windows as well as to the center area with the tensioning straps using locking pliers.

– Check the roof alignment to the roof pillars.

Dimension -a- = 6.0 ± 0.5 mm

– If necessary place a Felt Piece - 533 867 910 B- on the roof frame to balance it out.

1.3.3 Applying

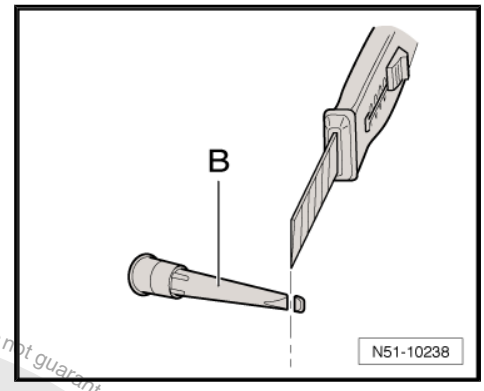
– Remove the roof.

– Clean the adhesive surfaces on the roof and the vehicle with Silicone Remover - LSE 020 100 A3- .

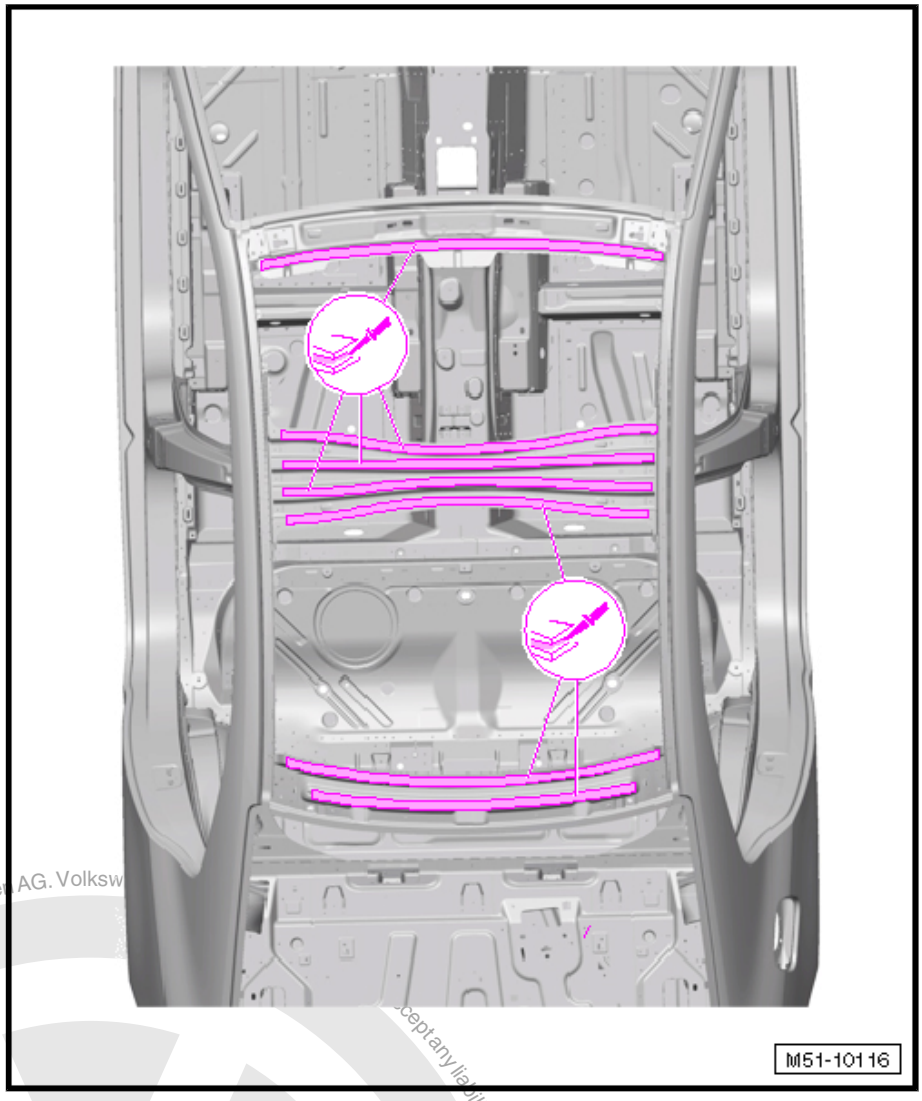
Note

- *Adhesive materials must be applied very quickly.*
- *Pay close attention to the processing time (working life).*
- *To apply the adhesive materials, use a compressed air gun or electric cartridge pistol.*

– For the corresponding bead geometry, cut off approximately 2 mm from the tube -B-.



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– Apply 1K Assembly Adhesive - D190 MKD A3- using the Pneumatic Cartridge Gun - VAG1761/1- on the front and the rear roof crossmember in the area near the adhesive applied at the factory.

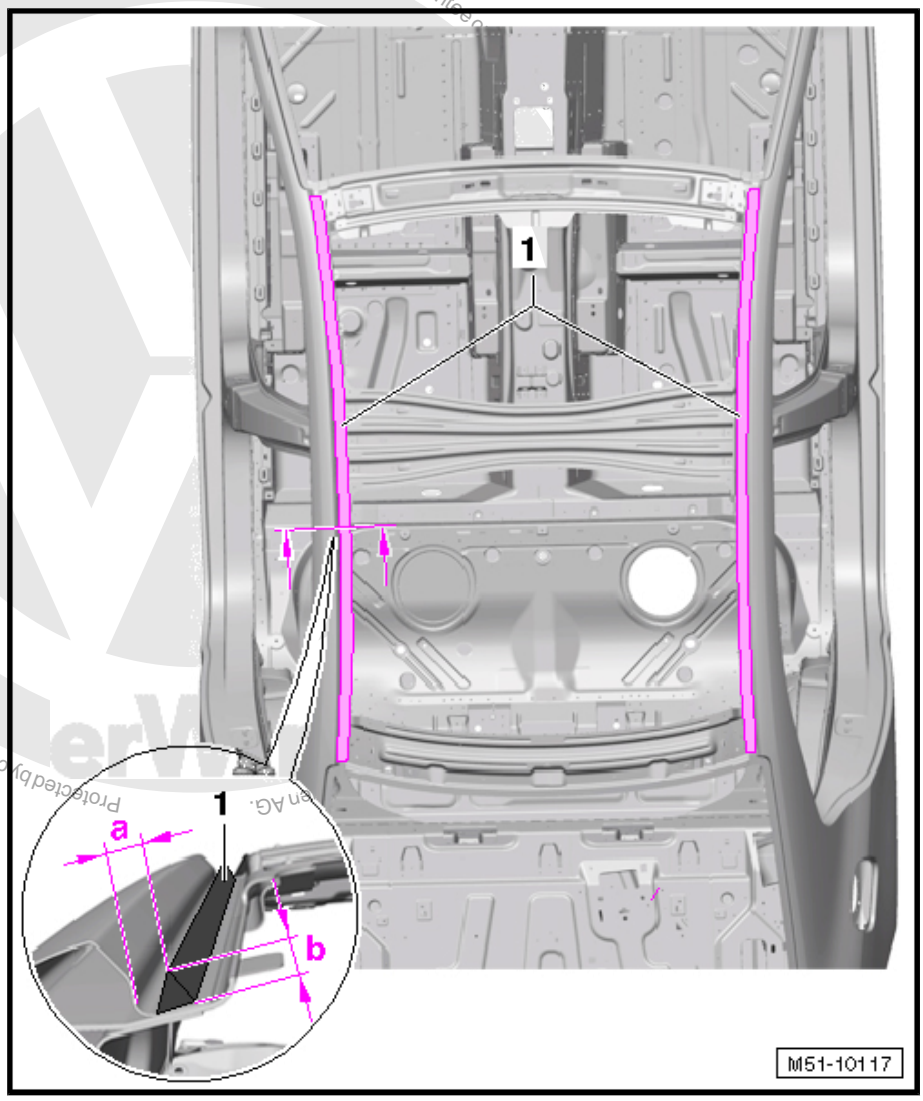
Vehicles with Roof Reinforcement:

– Apply 1K Assembly Adhesive - D190 MKD A3- using the Pneumatic Cartridge Gun - VAG1761/1- on the roof reinforcement in the area near the adhesive applied at the factory.

All Vehicles:

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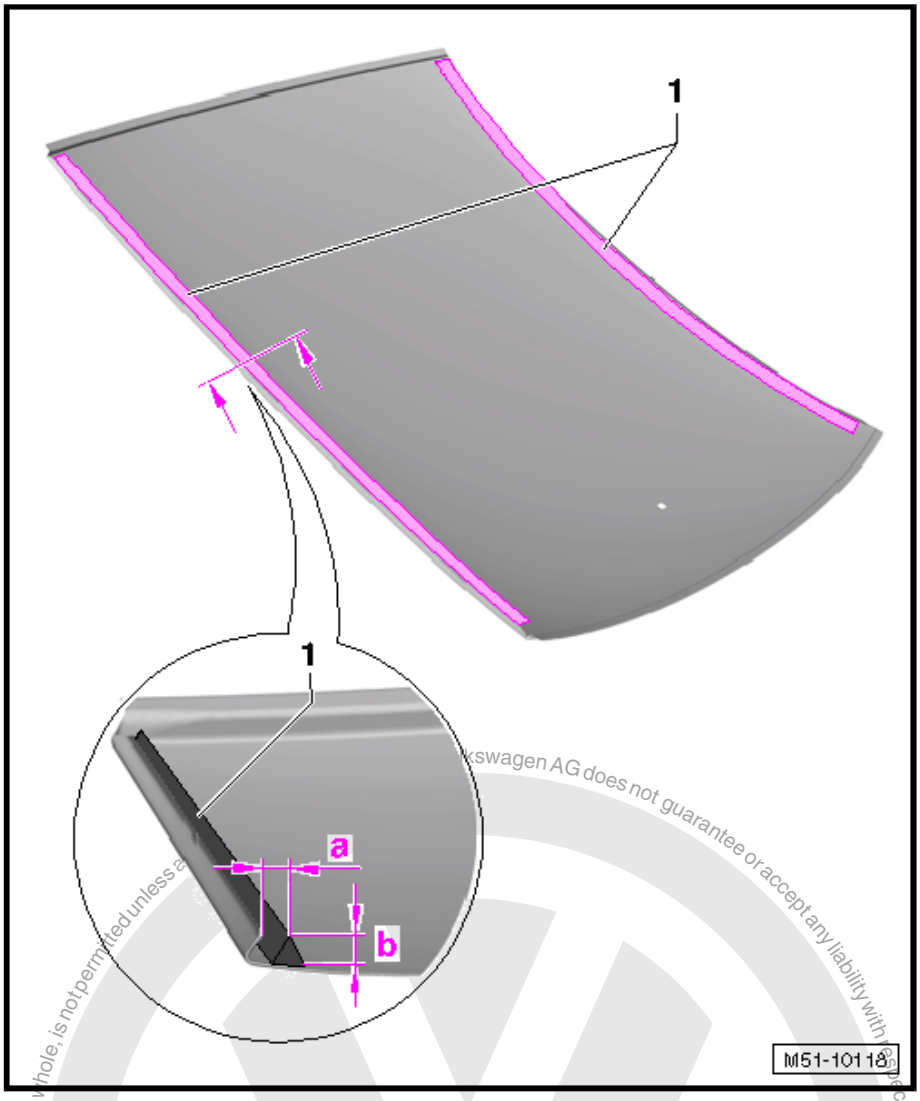
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Apply 1K Assembly Adhesive - D190 MKD A3- -1- using the Pneumatic Cartridge Gun - VAG1761/1- in the area of the roof frame.

Dimension -a- = approximately 10 mm.

Dimension -b- = approximately 11 mm



– Apply 1K Assembly Adhesive - D190 MKD A3- -1- using the Pneumatic Cartridge Gun - VAG1761/1- on the inside of the roof parallel to the left and right roof flange.

Dimension -a- = approximately 7 mm.

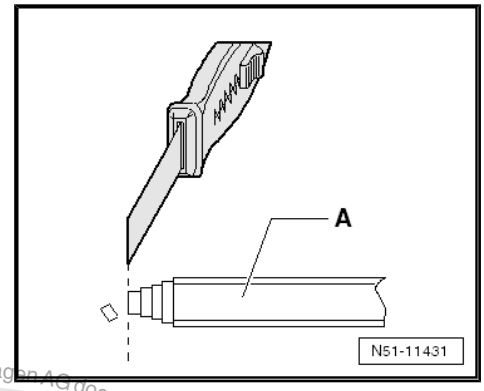
Dimension -b- = approximately 11 mm

Note

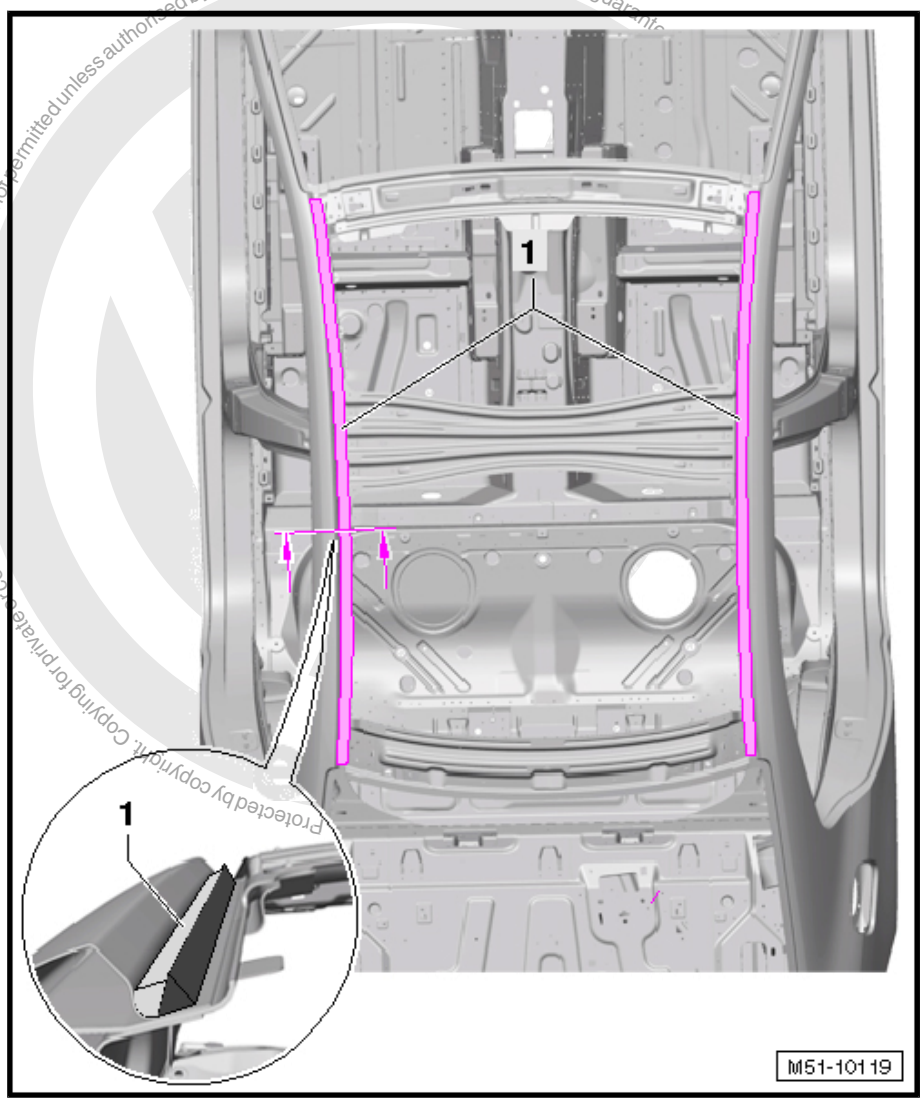
- *Processing time (pot life) for 2K Body Adhesive - D 180 KD3 A2- is approximately 90 minutes.*
- *An assistant is required for the following work steps.*
- *Immediately remove any 2K Body Adhesive - D 180 KD3 A2- that leaks out. 2K Body Adhesive - D 180 KD3 A2- can only be removed mechanically once it has hardened.*

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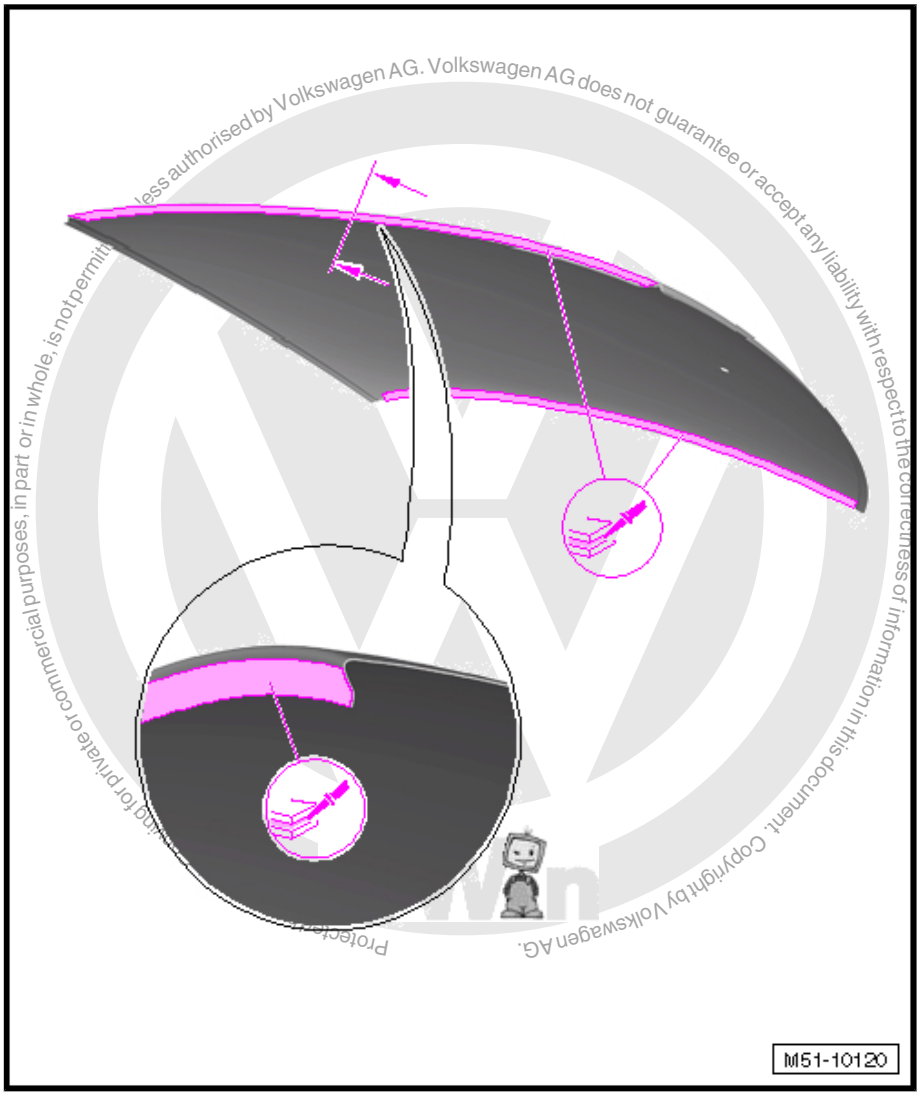
– Cut off the first section of the static mixer -A- to get the correct bead diameter.
– Operate the Double Cartridge Gun - VAS5237- without mixer, until adhesive extrudes evenly out of both chambers of cartridge union.
– Attach the mixer to the cartridge union.
– Apply the first 100 mm of adhesive onto a piece of cardboard and only then begin the application on the vehicle.



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– Fill the area -1- with 2K Body Adhesive - D 180 KD3 A2- using the Double Cartridge Gun - VAS5237- .

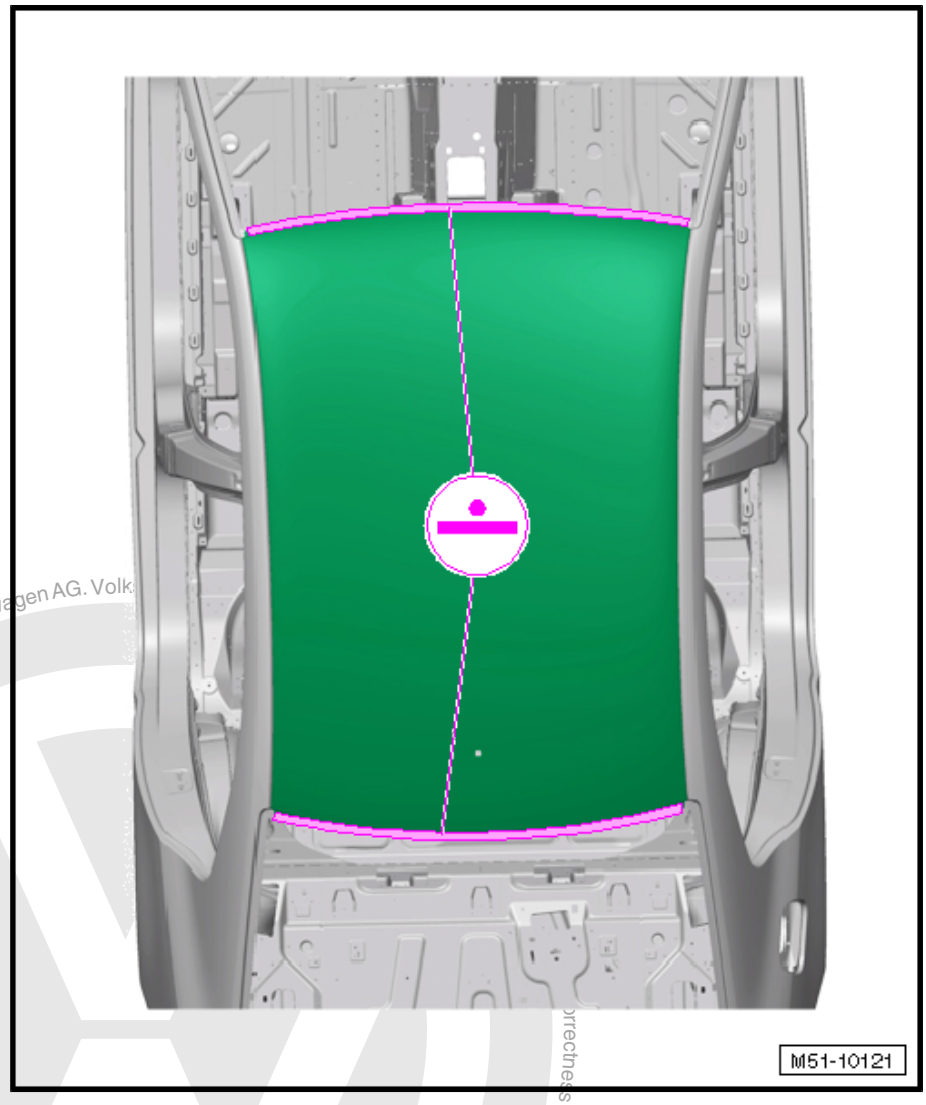


– Coat the roof flange with 2K Body Adhesive - D 180 KD3 A2- -1-.
– Mount the roof immediately and align it.
– Secure the roof to the openings for the front and rear windows as well as to the center area with the tensioning straps using locking pliers.
– Check the roof depth dimension -a- and adjust the roof if necessary, refer to
⇒ “1.3.2 Roof Depth Dimension, Adjusting”, page 113 .
– Immediately remove any 2K Body Adhesive - D 180 KD3 A2- that leaks out at the roof edge with a cloth soaked in Silicone Remover - LSE 020 100 A3- .

Note

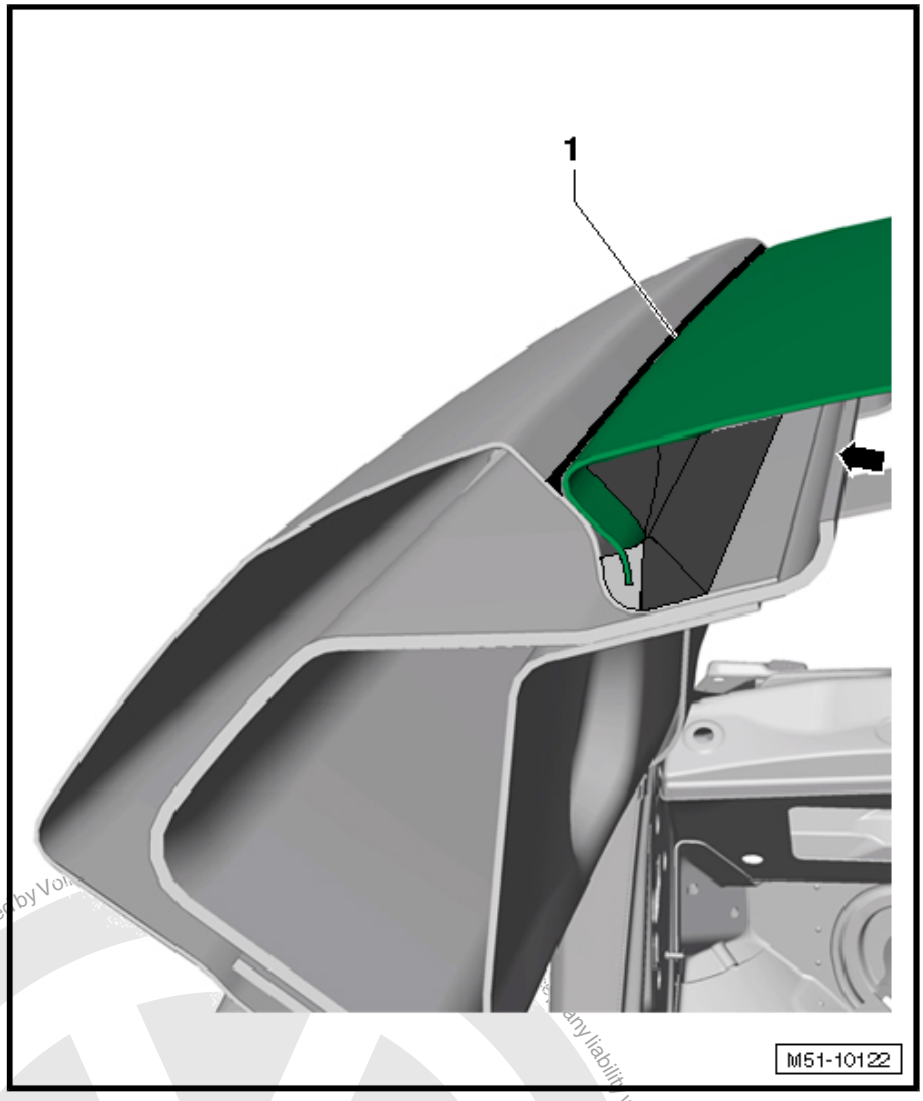
- *After adhering, vehicle must stand on a level surface at room temperature (at least 15 °C (59 °F) for 8 to 10 hours so the adhesive components can cure.*
- *Only after “minimum curing time” has elapsed can further work be performed on the vehicle.*

1.3.4 Welding



– Weld the roof in the window opening at the front and rear using a straight-line spot weld seam.

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– Apply a fine-seal -1- of the of adhesive seam to the seam between the roof and the roof pillar using Adhesive - AKD 476 KD5 05- .
– After painting, protect hollow roof spaces -arrow- with Conservation Wax - AKR 321 M15 4- .

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2 Roof, Removing and Installing, Vehicles with Sunroof

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Roof

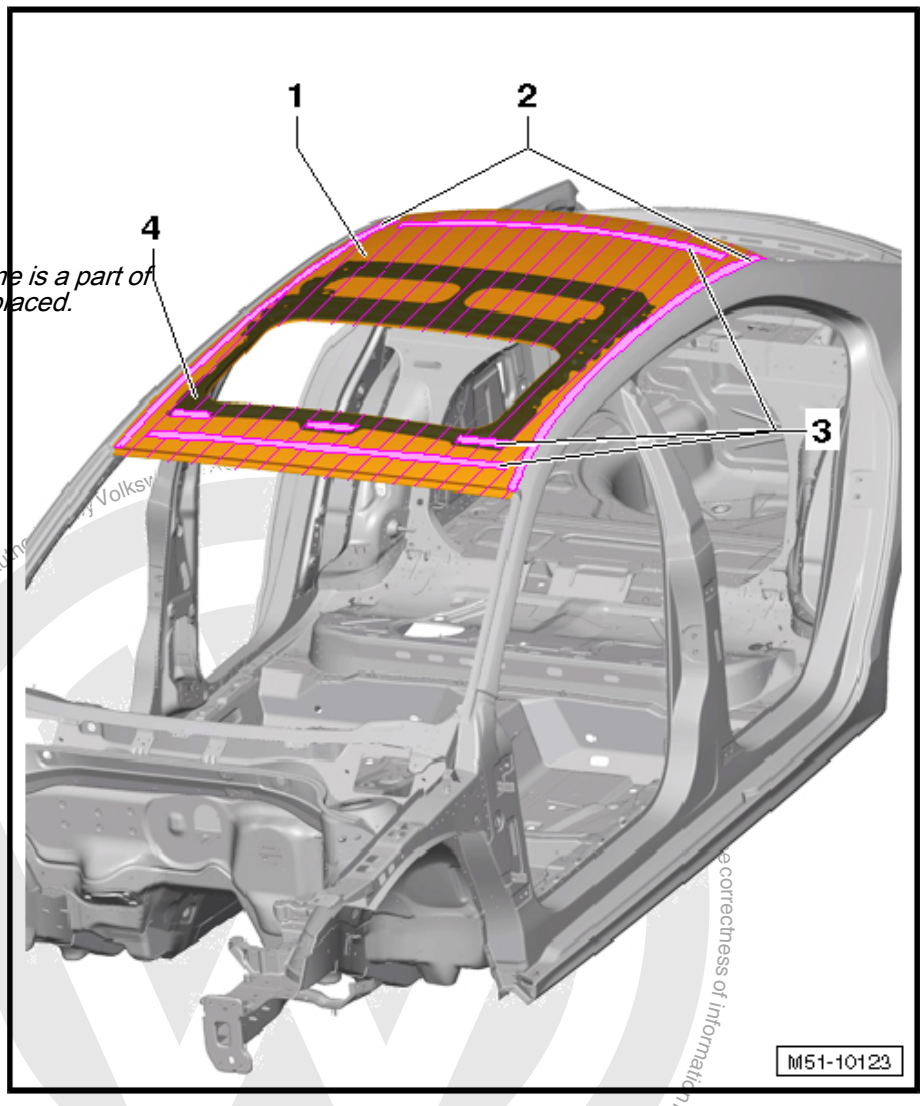
2 - Laser Brazed Seam

3 - Bonded Area

4 - Reinforcement Frame

Note

The reinforcement frame is a part of the roof and is also replaced.



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2.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

Special tools and workshop equipment required

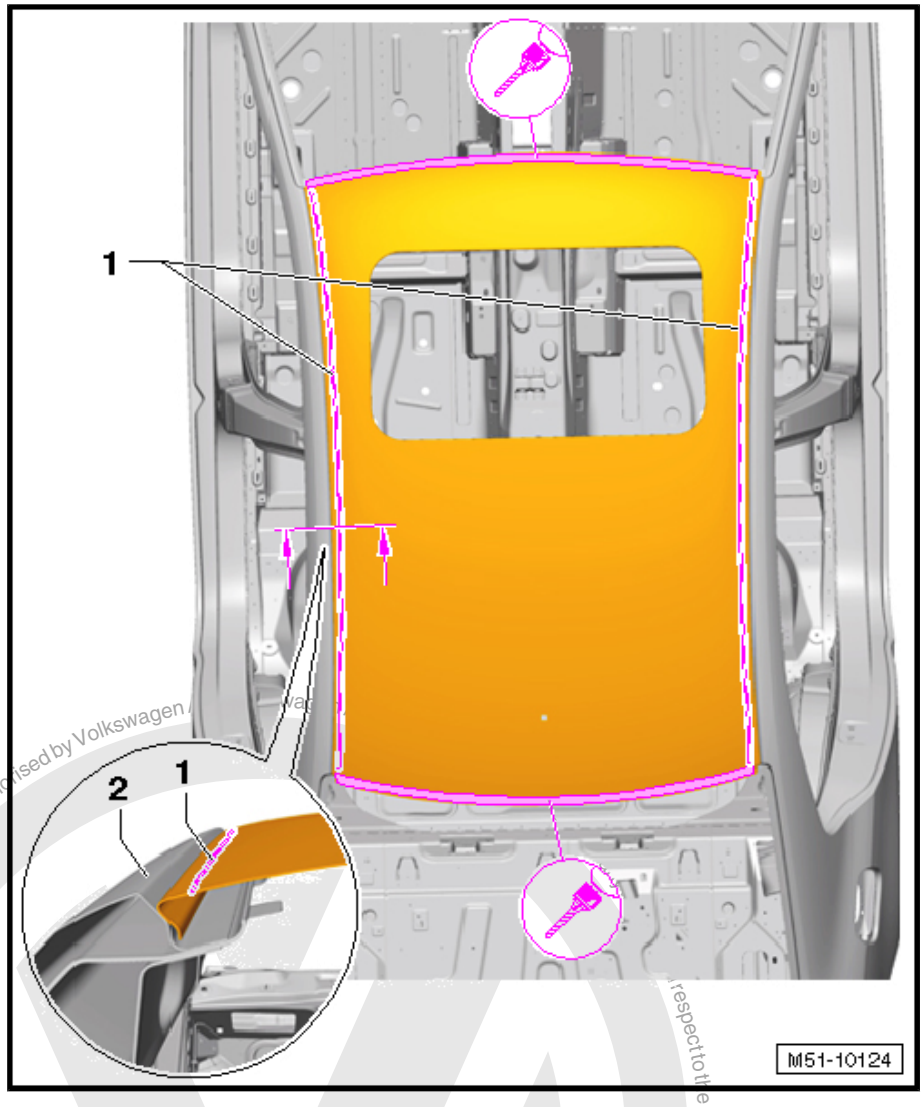
- Pneumatic Cartridge Gun - VAG1761/1-
- Cartridge Heater - VAG1939A-
- Double Cartridge Gun - VAS5237-
- Gauge - Gap Adjustment - 3371-
- Tensioning Strap - T10038-
- Double Suction Lifter - VAG1344-

2.2 Removing

Note

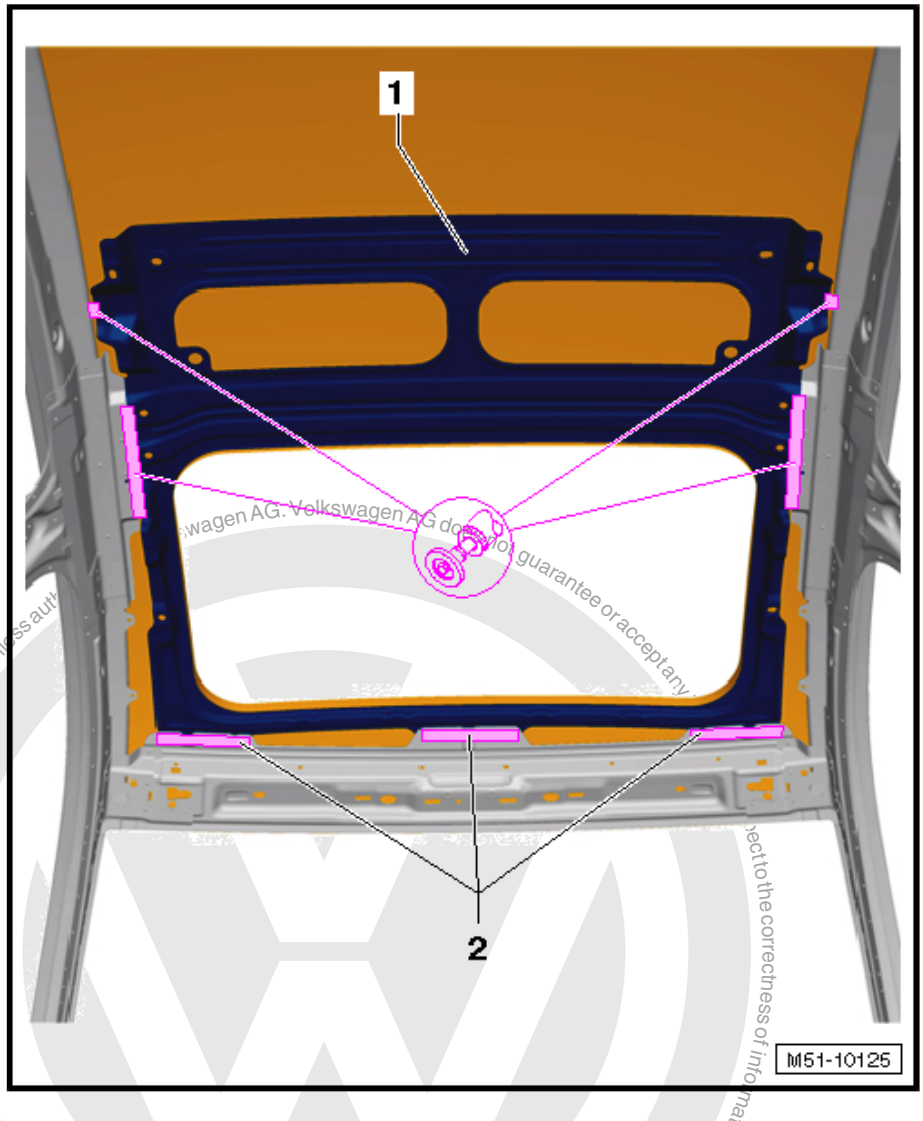
- *Apply cloth reinforced adhesive tape parallel to the laser brazed seams on the left and right side of the roof pillars. It prevents pillars from getting damaged or dirty while servicing.*
- *Maintain a distance of approximately 15 mm to the roof pillar -2- so that it does not get damaged.*
- *Be careful not to cut into the plates behind it when making the separation cuts.*

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– Loosen the front and rear original connection on the roof crossmember.
– Remove the bonded joint from the roof crossmember.
– Make the separation cuts -1- so that they are parallel to the laser brazed seams and then separate the roof.

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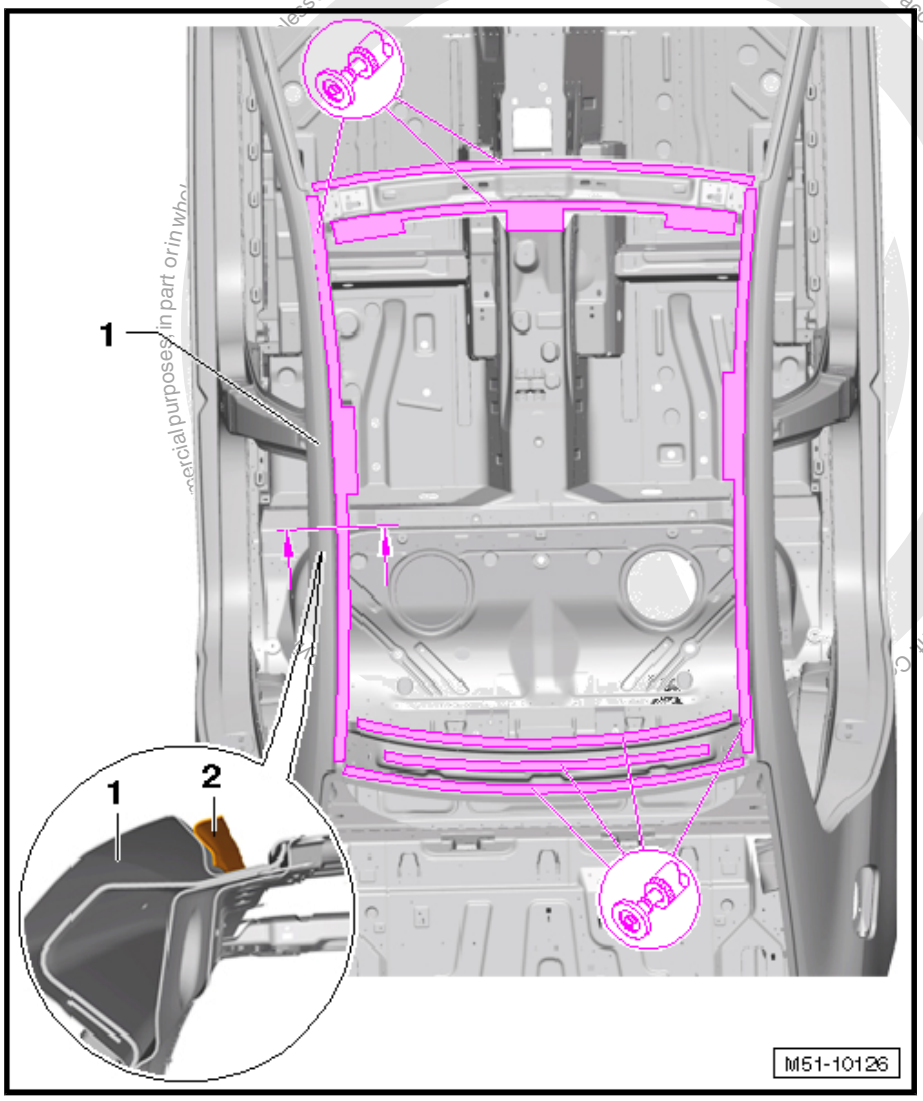


– Cut the bonded joint -2- between the reinforcement frame -1- and the front roof crossmember.
– Separate the original joint on the inner side panel.

Note

- *Be careful not to damage the roof pillar -1- when removing any remaining roof material -2-.*
- *Do not use separating- or roughing blades; use a Lamellar disc instead.*

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– Remove the remainder -2-.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.
– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
– Lightly sand the adhesive surfaces in the connection.

2.3 Installing

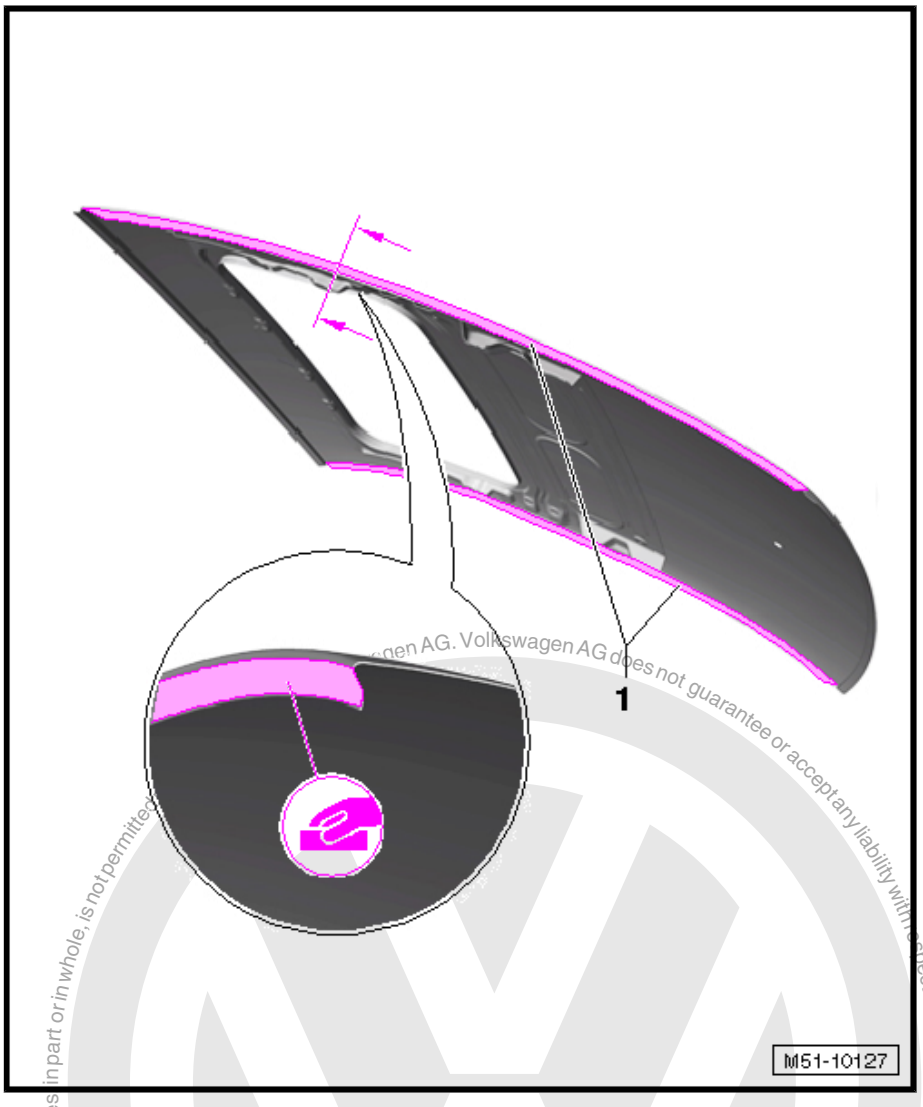
Note

- *Use only welding equipment approved by Volkswagen AG, refer to ⇒ "2.1 Tools", page 123 .*
- *In order to guarantee problem-free and long lasting roof repair, the following work procedure must always be followed.*
- *Be sure to follow the work procedure exactly to prevent making any mistakes.*

2.3.1 Preparing New Parts

New part

- Roof
- 1K Assembly Adhesive - D 190 MKD A3- , (3 cartridges)
- 2K Body Adhesive - D 180 KD3 A2- (2 cartridge set)
- Adhesive - AKD 476 KD5 05-
- Felt - 533 867 910 B-
- Cavity Sealant - AKR 321 M15 4-



– Sand the left and right adhesive areas -1- on the roof down to the bare metal.

This ensures that the 2K Body Adhesive - D 180 KD3 A2- can achieve a good bond with the adhesive surfaces.

– Secure four Double Suction Lifter - VAG1344- on the outer side of the roof.

– Mount the roof onto the roof frame.

– Check how the roof fits with the windshield and the rear window.

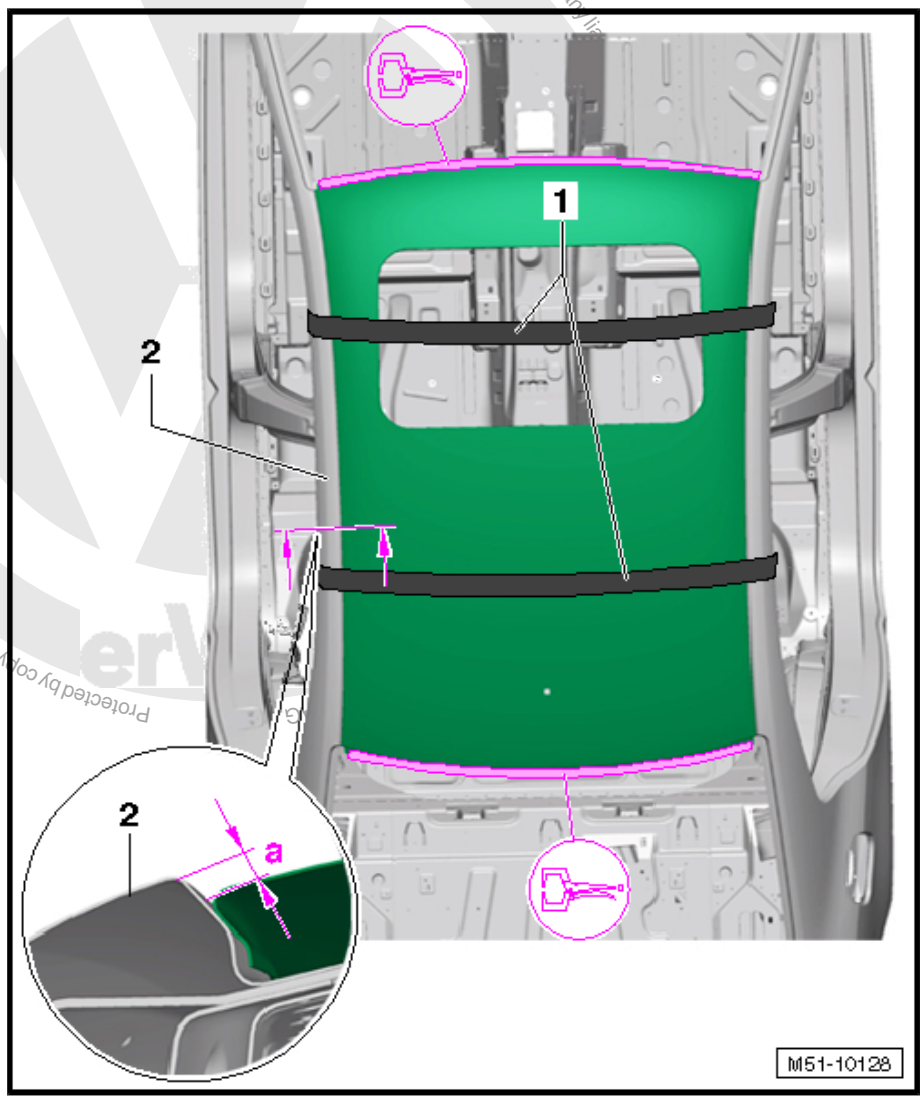
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2.3.2 Depth Dimension, Adjusting

Note

- *The tensioning straps -1- prevent roof from lifting off the roof frame and sliding during the adhesive procedure.*
- *To prevent damage, do not overtighten the tensioning straps.*
- *Dimension -a- is determined by tightening or loosening the tension straps so that the roof is lower than the roof pillar -2-.*
- *Use the Gauge - Gap Adjustment - 3371- to check dimension -a-.*

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– Secure the roof to the openings for the front and rear windows as well as to the center area with the tensioning straps using locking pliers.

– Check the roof alignment to the roof pillars.

Dimension -a- = 6.0 ± 0.5 mm

– If necessary place a Felt Piece - 533 867 910 B- on the roof frame to balance it out.

2.3.3 Applying

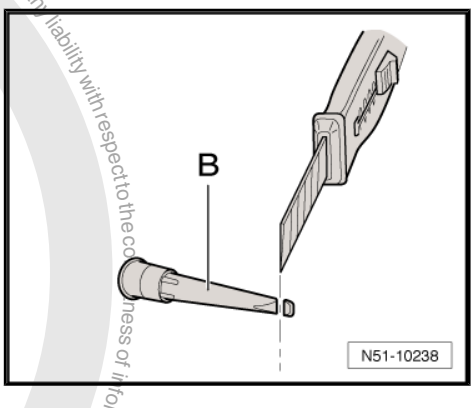
– Remove the roof.

– Clean the adhesive surfaces on the roof and the vehicle with Silicone Remover - LSE 020 100 A3- .

Note

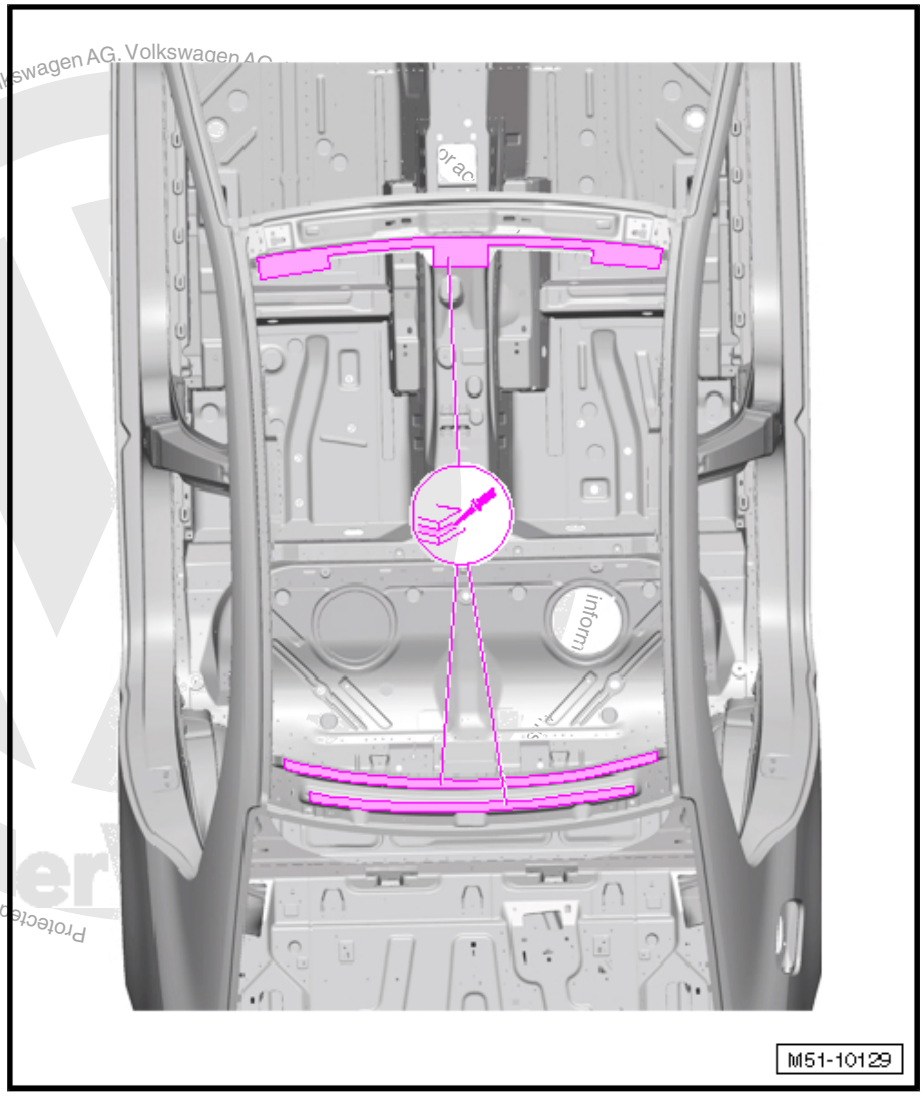
- *Adhesive materials must be applied very quickly.*
- *Pay close attention to the processing time (working life).*
- *To apply the adhesive materials, use a compressed air gun or electric cartridge pistol.*

– For the corresponding bead geometry, cut off approximately 2 mm from the tube -B-.

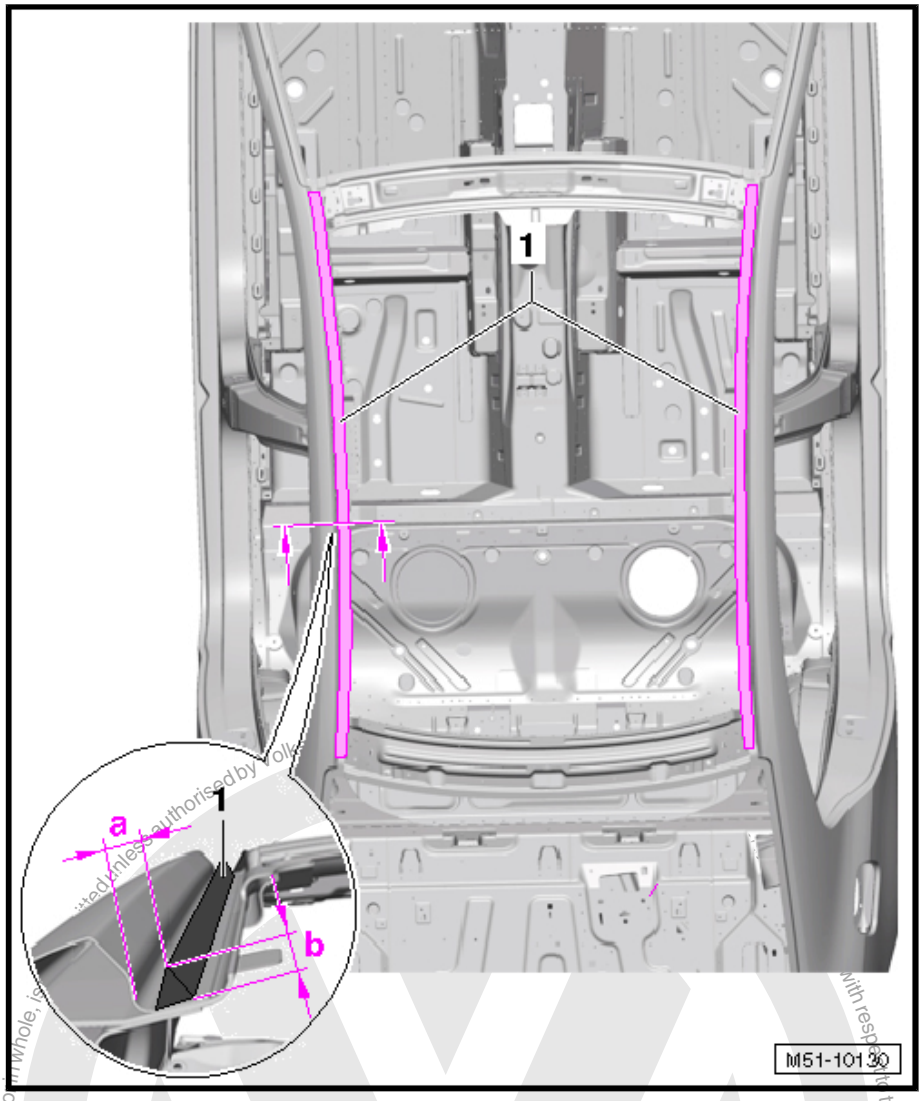


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– Apply 1K Assembly Adhesive - D190 MKD A3- using the Pneumatic Cartridge Gun - VAG1761/1- on the front and the rear roof crossmember in the area near the adhesive applied at the factory.

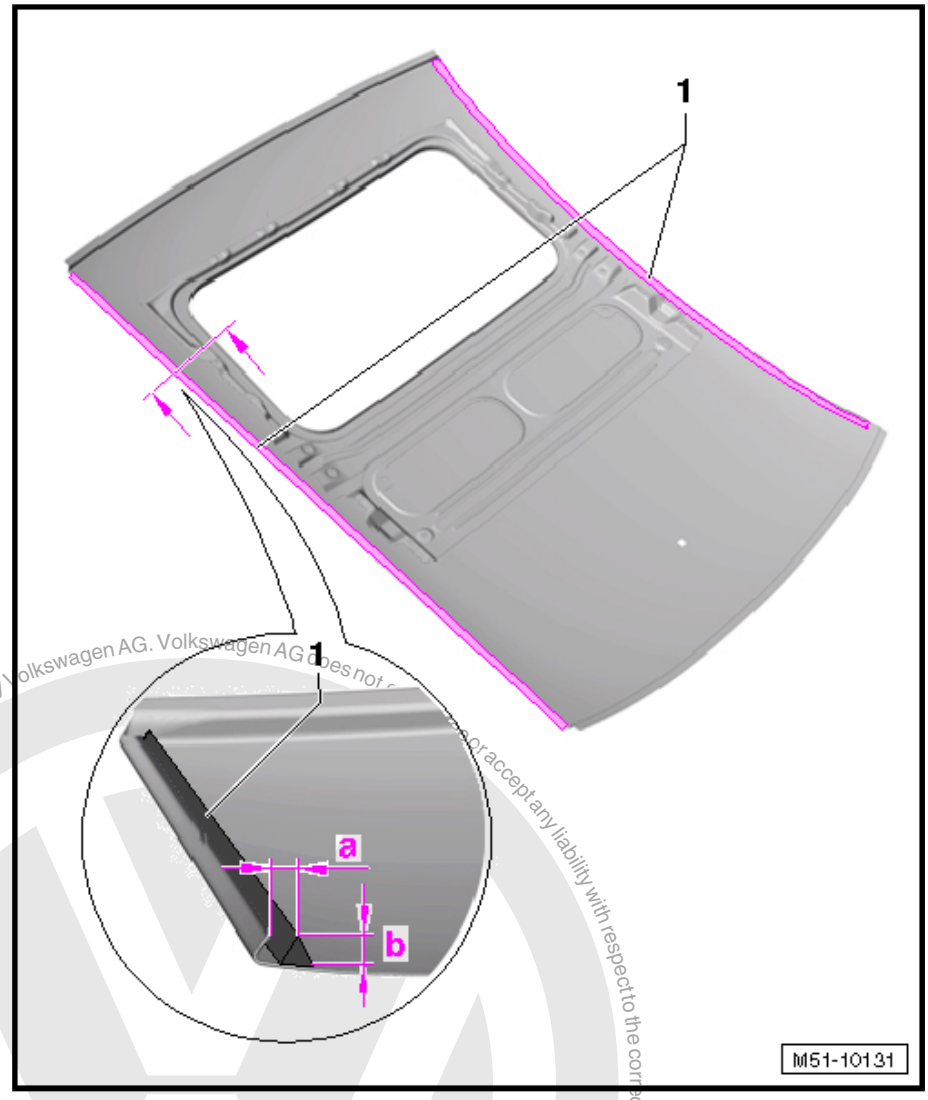


Apply 1K Assembly Adhesive - D190 MKD A3- -1- using the Pneumatic Cartridge Gun - VAG1761/1- in the area of the roof frame.

Dimension -a- = approximately 10 mm.

Dimension -b- = approximately 11 mm

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– Apply 1K Assembly Adhesive - D190 MKD A3- -1- using the Pneumatic Cartridge Gun - VAG1761/1- on the inside of the roof parallel to the left and right roof flange.

Dimension -a- = approximately 7 mm.

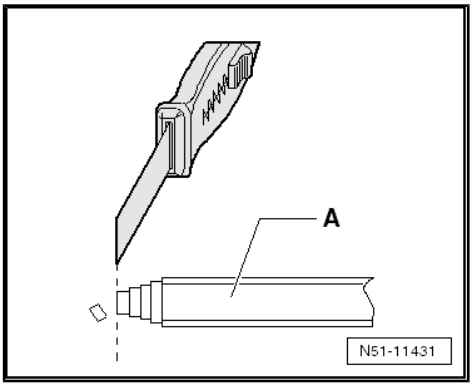
Dimension -b- = approximately 11 mm

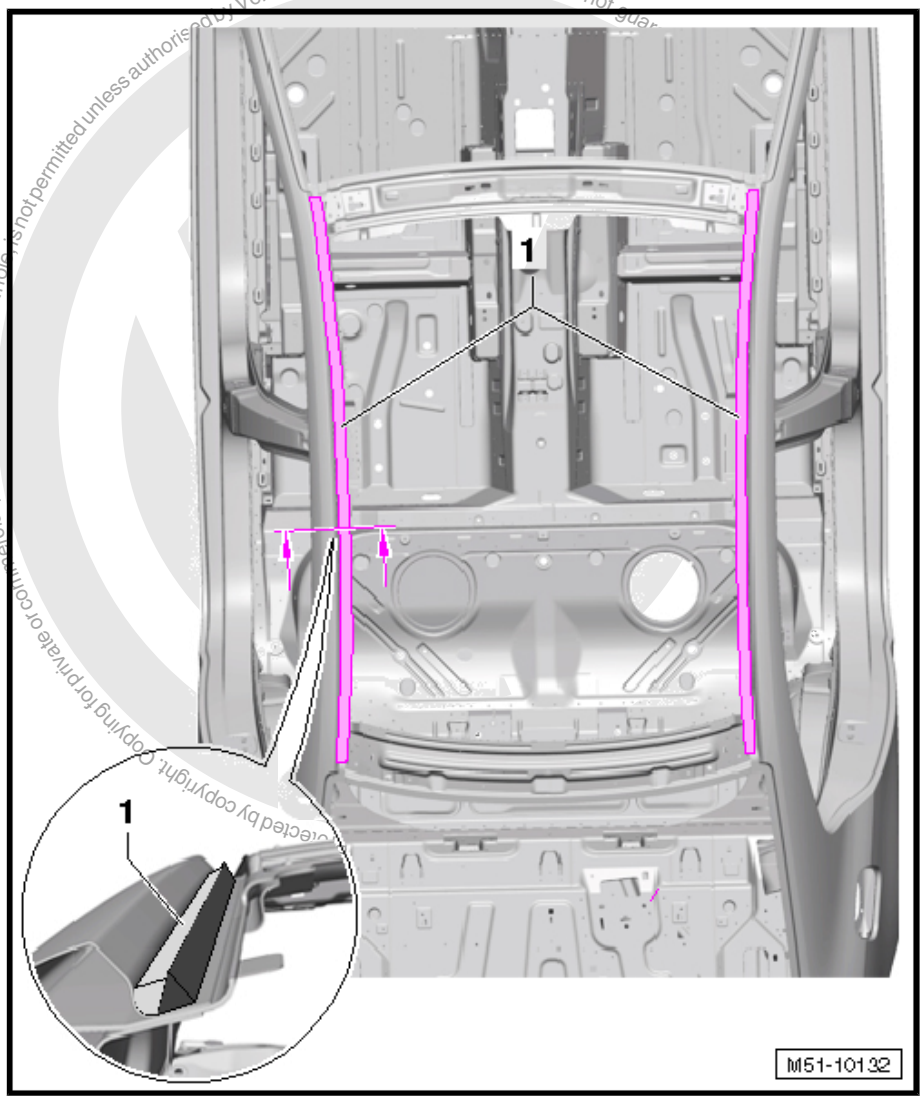
Note

- *Processing time (pot life) for 2K Body Adhesive - D 180 KD3 A2- is approximately 90 minutes.*
- *An assistant is required for the following work steps.*
- *Immediately remove any 2K Body Adhesive - D 180 KD3 A2- that leaks out. 2K Body Adhesive - D 180 KD3 A2- can only be removed mechanically once it has hardened.*

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– Cut off the first section of the static mixer -A- to get the correct bead diameter.
– Operate the Double Cartridge Gun - VAS5237- without mixer, until adhesive extrudes evenly out of both chambers of cartridge union.
– Attach the mixer to the cartridge union.
– Apply the first 100 mm of adhesive onto a piece of cardboard and only then begin the application on the vehicle.

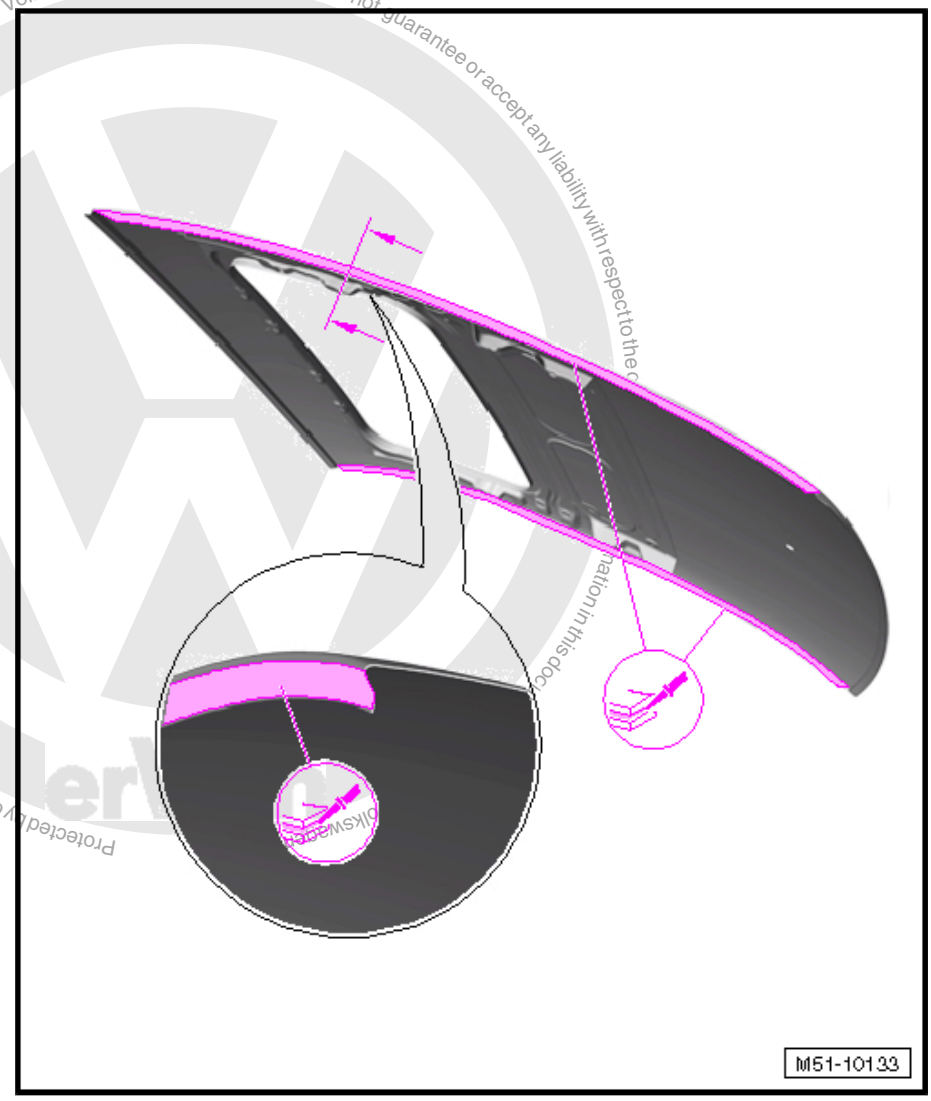




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– Fill the area -1- with 2K Body Adhesive - D 180 KD3 A2- using the Double Cartridge Gun - VAS5237- .

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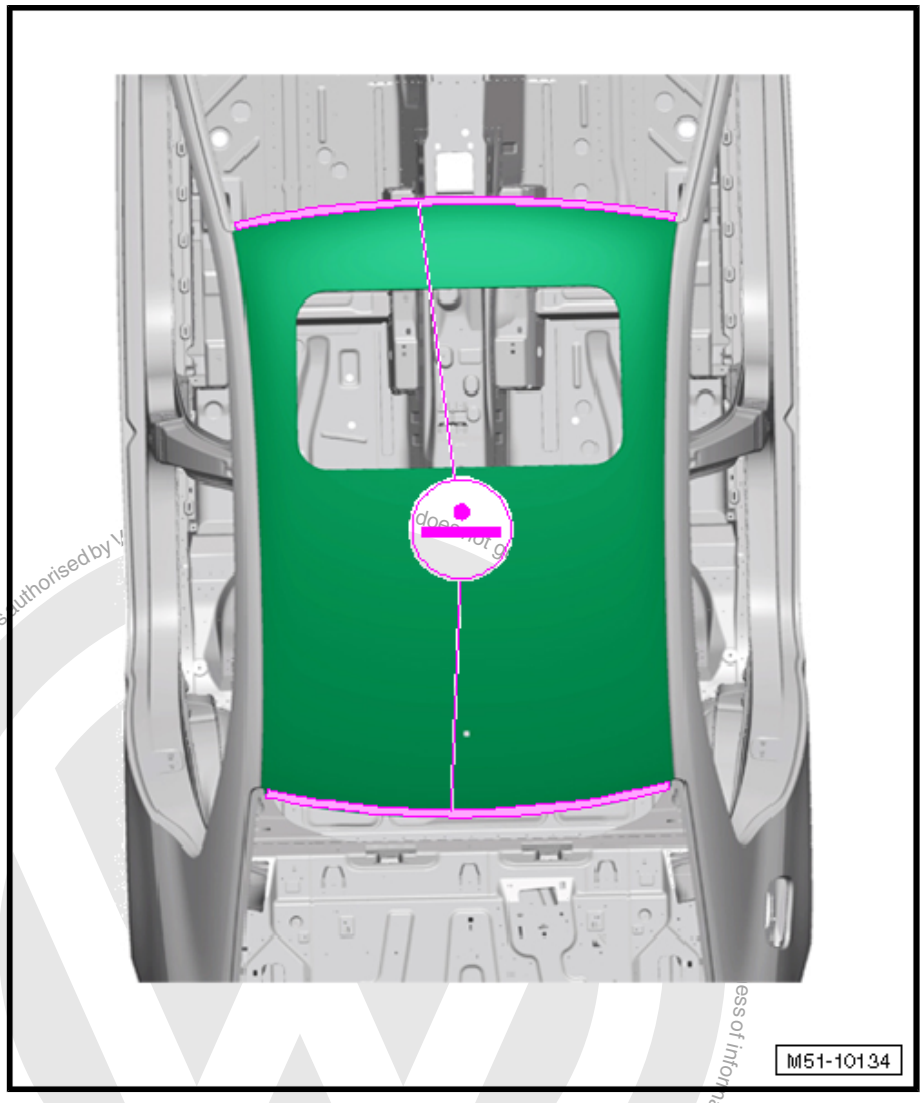


– Coat the roof flange with 2K Body Adhesive - D 180 KD3 A2- -1-.
– Mount the roof immediately and align it.
– Secure the roof to the openings for the front and rear windows as well as to the center area with the tensioning straps using locking pliers.
– Check the roof depth dimension -a- and adjust the roof if necessary, refer to
⇒ “2.3.2 Depth Dimension, Adjusting”, page 128 .
– Immediately remove any 2K Body Adhesive - D 180 KD3 A2- that leaks out at the roof edge with a cloth soaked in Silicone Remover - LSE 020 100 A3- .

Note

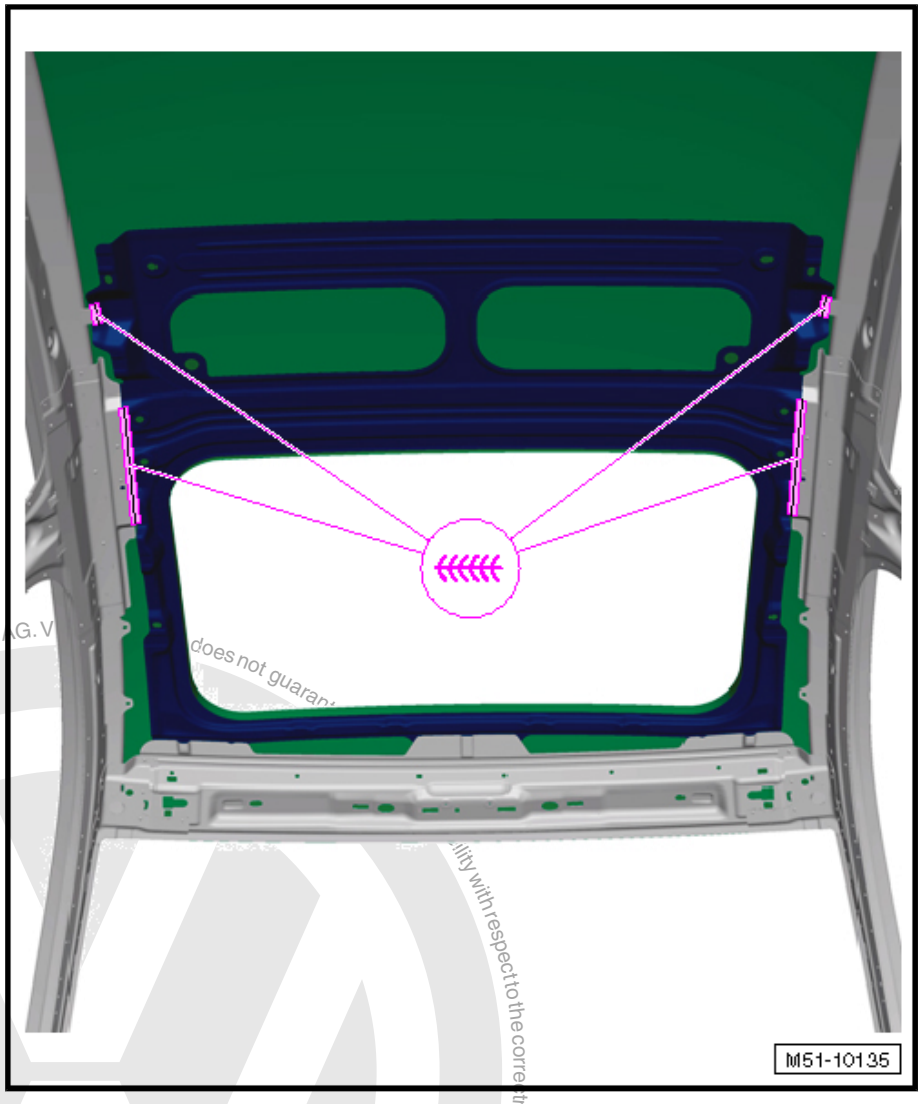
- *After adhering, vehicle must stand on a level surface at room temperature (at least 15 °C) for 8 to 10 hours so the adhesive components can cure.*
- *Only after “minimum curing time” has elapsed can further work be performed on the vehicle.*

2.3.4 Welding



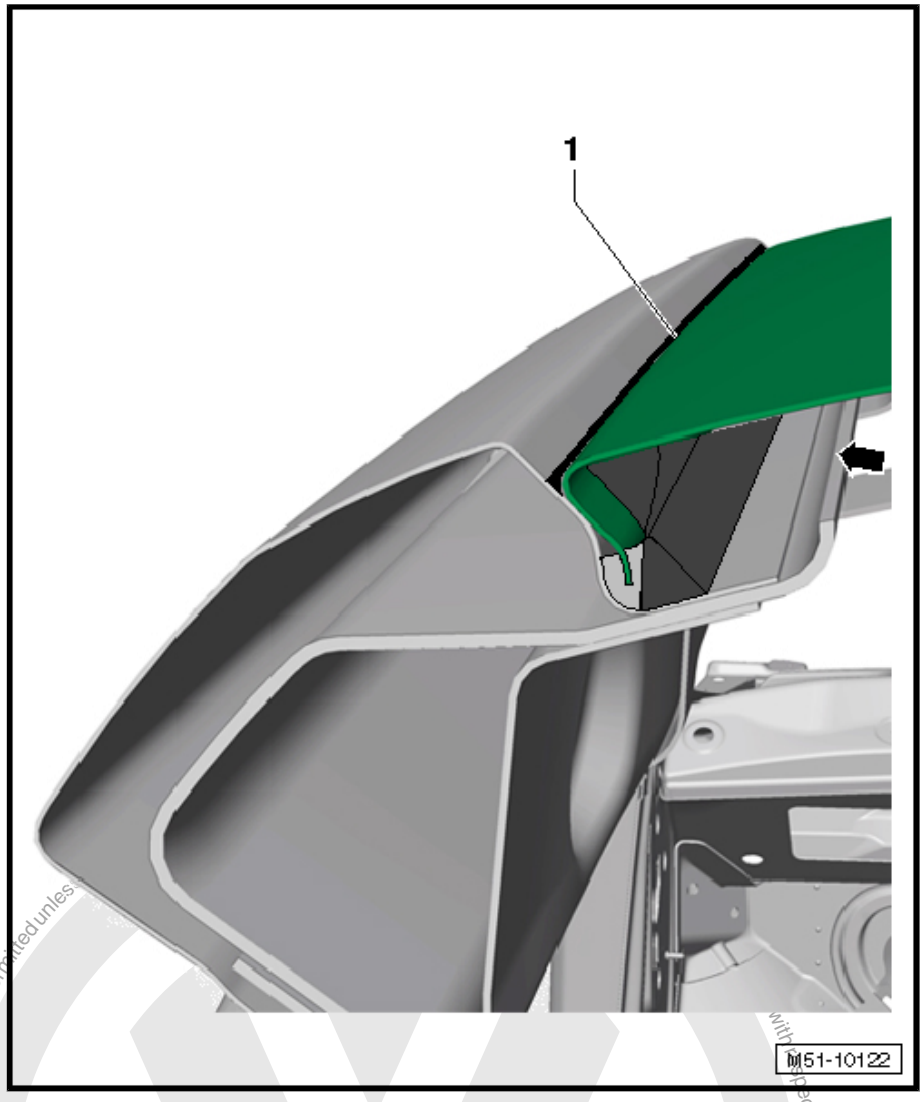
– Weld the roof in the window opening at the front and rear using a straight-line spot weld seam.

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1 Weld the reinforcement frame to the inner side panel with a gas-shielded arc continuous weld seam.

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– Apply a fine-seal -1- of the of adhesive seam to the seam between the roof and the roof pillar using Adhesive - AKD 476 KD5 05- .
– After painting, protect hollow roof spaces -arrow- with Conservation Wax - AKR 321 M15 4- .

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3 Roof Pillar, Removing and Installing

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Roof Pillar

2 - Separating Cut on the Roof

3 - Bonded Area on the Roof Rack Reinforcement

Note

The roof rack reinforcements are attached to the roof pillar and are also replaced.

4 - Molded Foam Part

Note

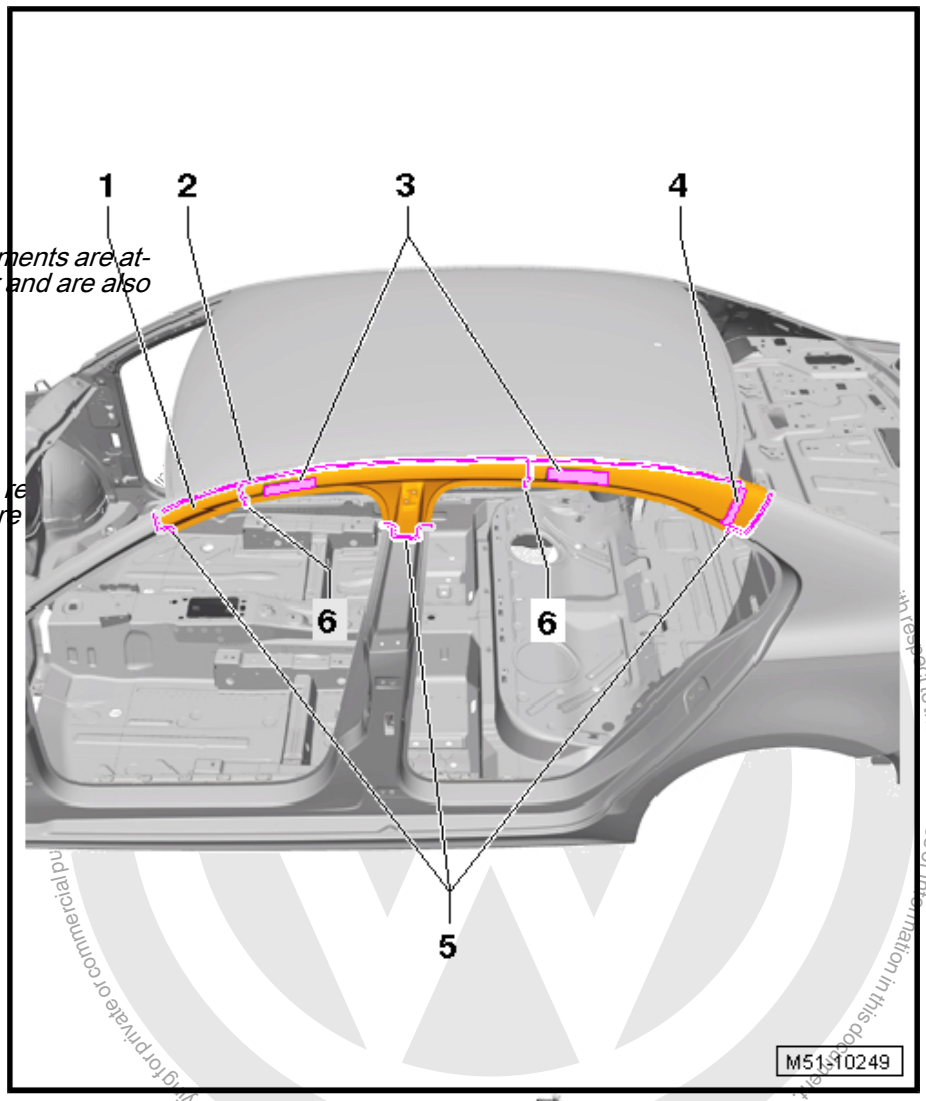
Foam residue must be re much as possible before work.

5 - Pillar Separation Cuts

6 - Separating Cuts

Partial renewal
A partial replacement on the roof pillar is possible with these separating cuts.

Pay close attention to the replacement part separation cut for the sub-part when performing a partial replacement.



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3.1 Tools

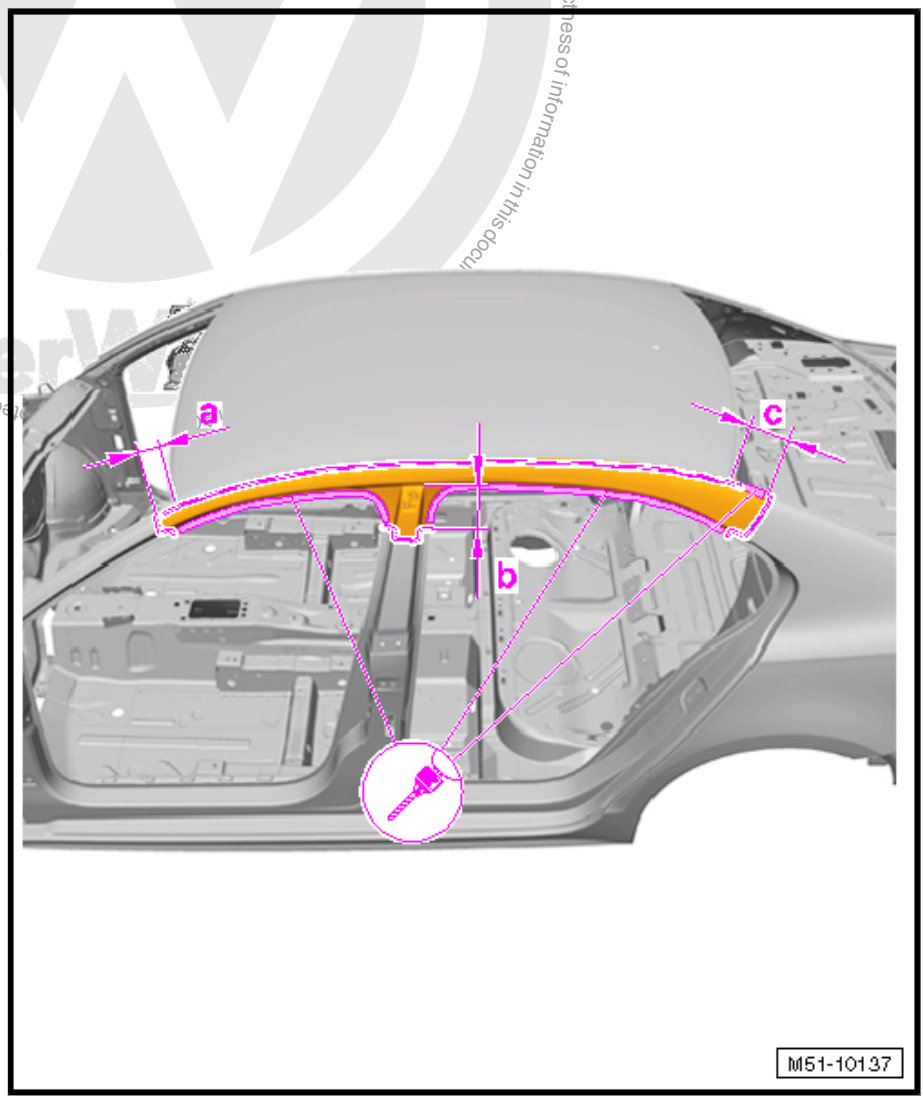
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

3.2 Removing

Note

- *Be sure not to damage the metal panels behind it when making the separating cut.*
- *If the B-pillar reinforcement is damaged, then is must always be replaced.*
- *B-pillar reinforcement must not be re-welded for safety reasons »crash safety«!*



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– Place separating cuts as shown.

Dimension -a- = 30 mm

Dimension -b- = 150 mm

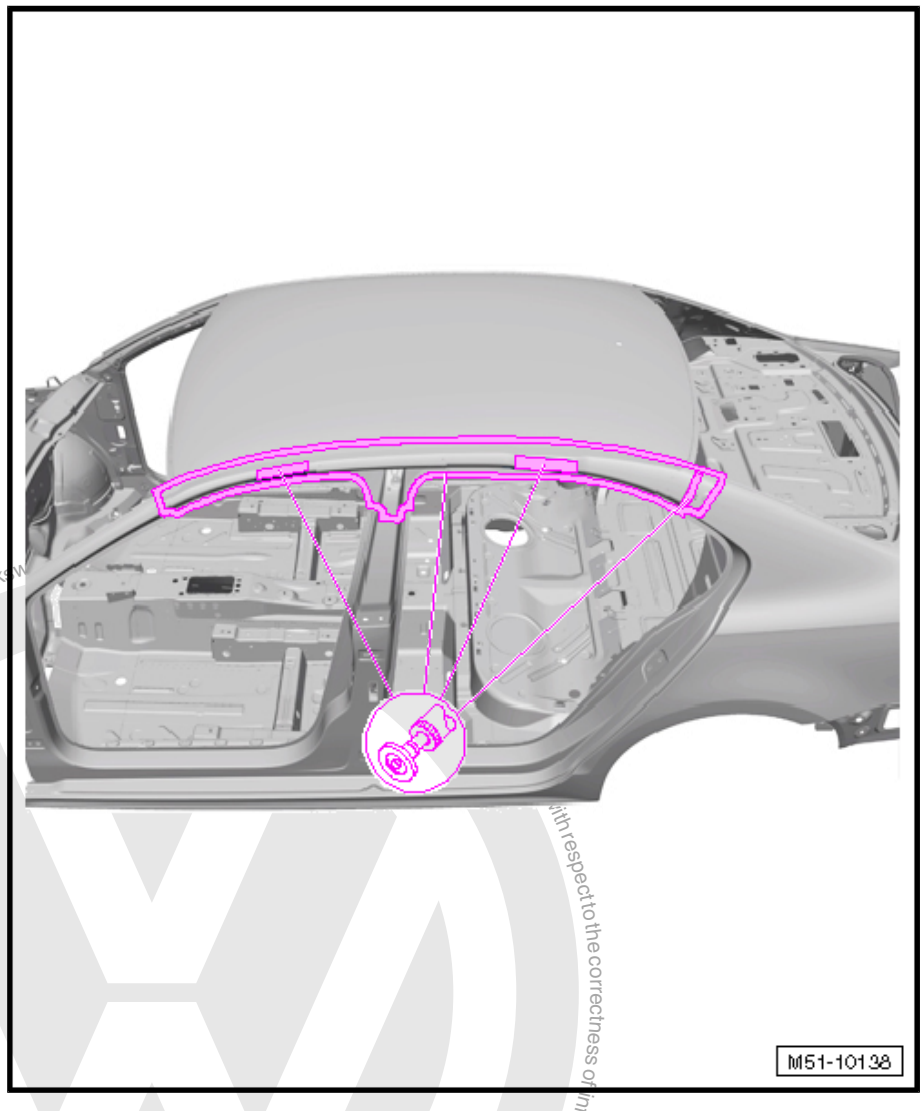
Dimension -c- = 100 mm

– Make a separation cut parallel to the roof approximately 15 mm away from the laser brazed seam.

– Cut the original joint in the door cut-outs and in the side window cut-out.

Note

Foam residue must be removed as much as possible before sanding work.



– Remove residual material.

– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Manual, Corrosion, Attachments and Welded Parts, Materials.

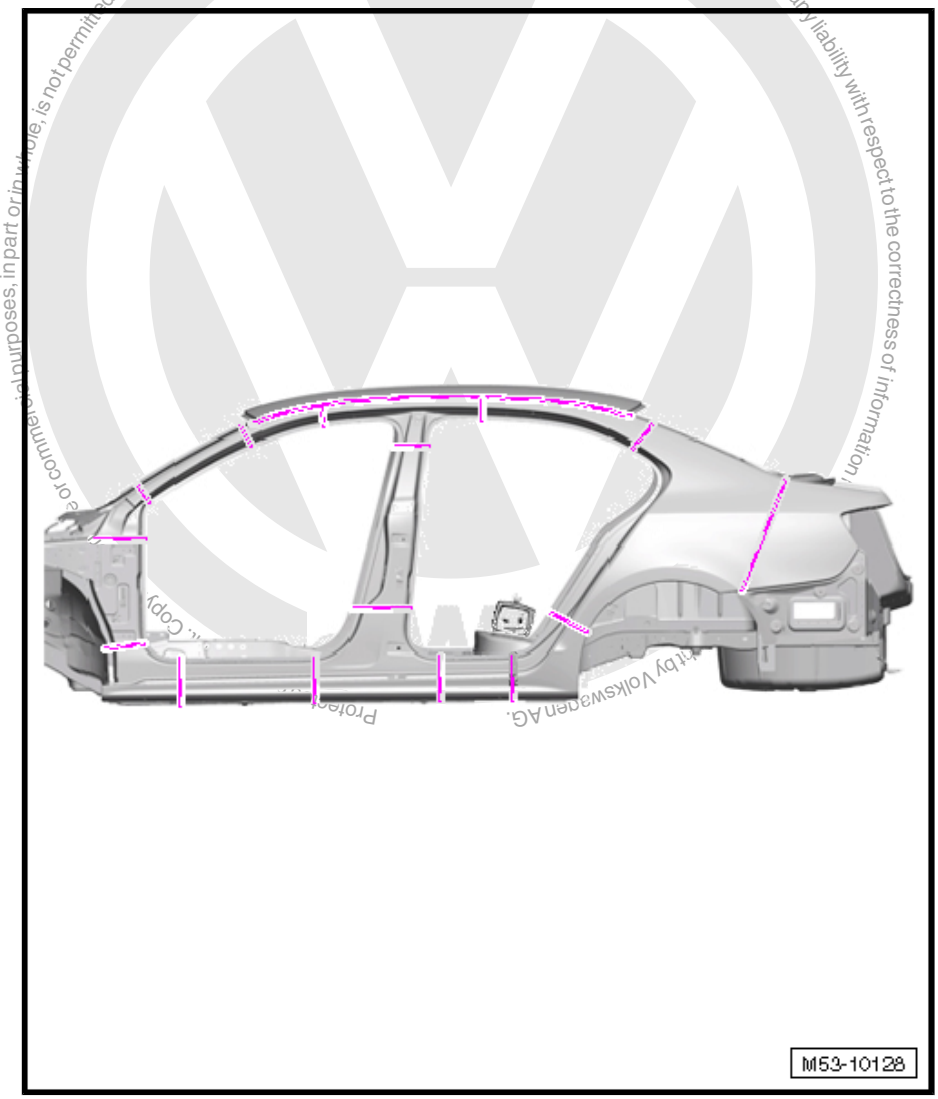
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– Lightly sand the adhesive surfaces in the connection.

3.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "3.1 Tools", page 139 .



Note

MIG soldered seams/gas-shielded arc continuous weld seam are permitted on the separating cuts shown in the illustration.

3.3.1 Preparing New Parts

New Part

- Side panel or side panel sub-part for partial replacement
- Molded Foam Part

♦ 2K Body Adhesive - D 180 KD3 A2-



– Transfer separating cut onto new part and cut to shape.

3.3.2 Molded Foam Parts

Observe Repair Notes.

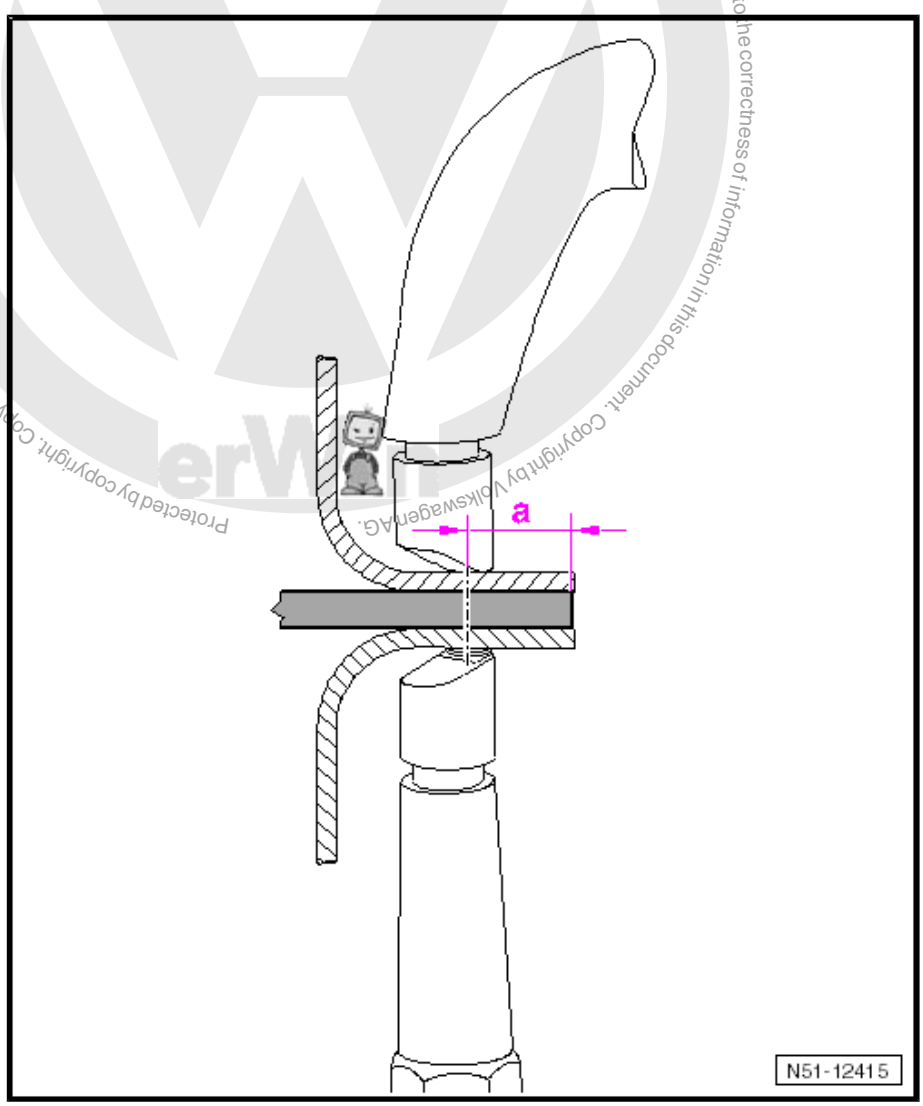
Molded foam parts, refer to ⇒ General Information; Body Repairs, Body Collision Repair ; General Information, Molded Foam Parts

Position of molded foam parts, refer to
⇒ “5 Molded Foam Parts”, page 7 .

3.3.3 Welding

Note

- *High-strength/highest strength hot formed is used on the A-, B- and C-pillars. The welding flanges in these areas are approximately 13 mm wide.*
- *If the weld points are placed on the edge of the hot-formed steel panels, the high temperatures will change the structure of the steel and this will negatively affect the crash worthiness.*



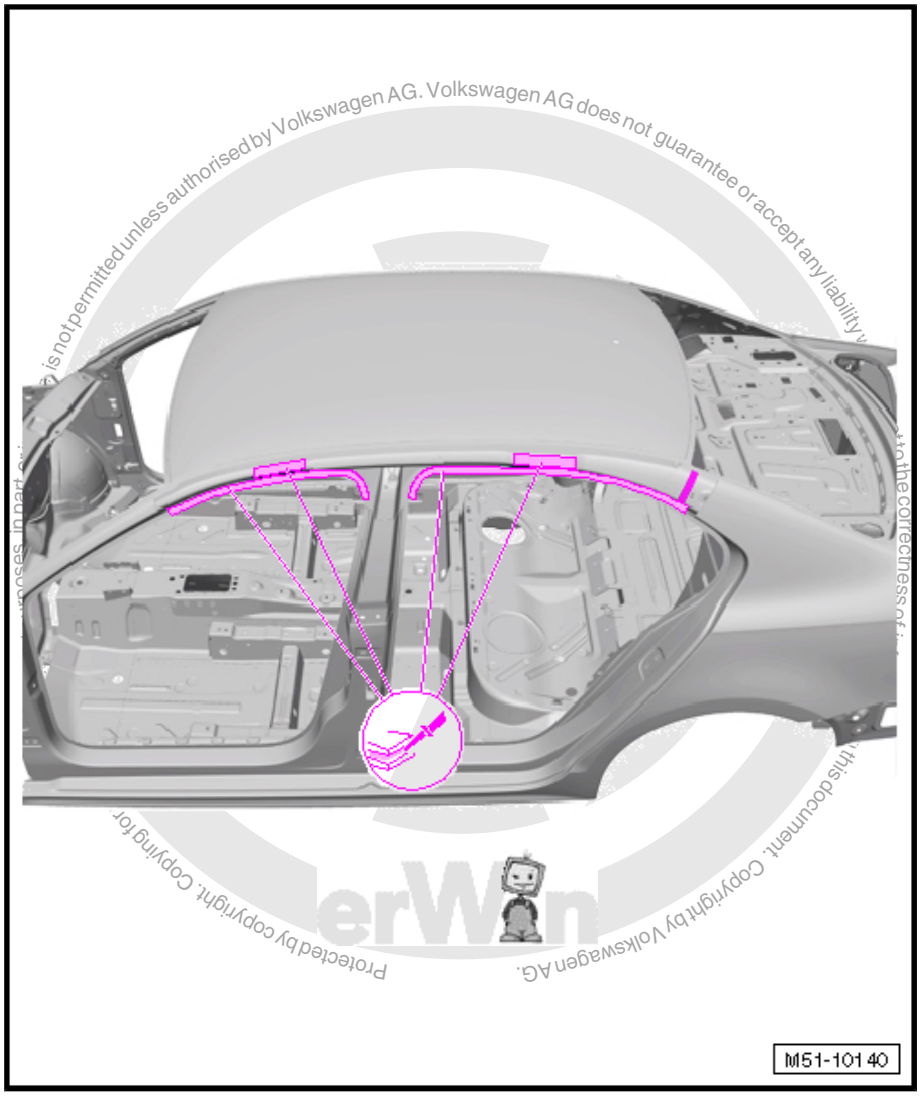
The weld points must be made as far as possible to the inside.

- Dimension -a- (8 mm) can be reached with beveled weld caps.

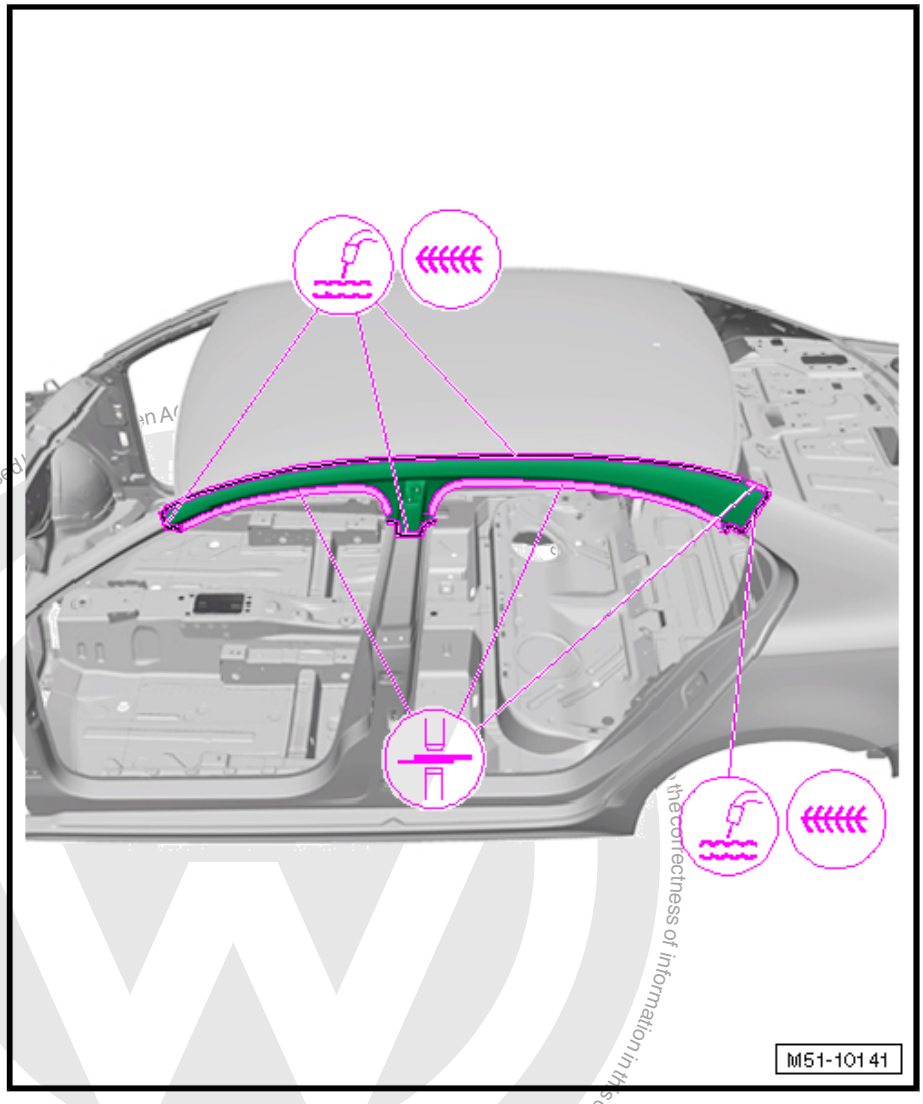
Note

New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

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– Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.
– Check fit with attachments.



– Weld the separation cuts, either MIG-L stitch weld seam or a gas-shielded arc continuous weld seam
– Weld the door openings and the and the opening for the rear window with a straight-line spot weld seam.

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RO: 51 07 55 50

4 Front Roof Crossmember, Replacing

WARNING

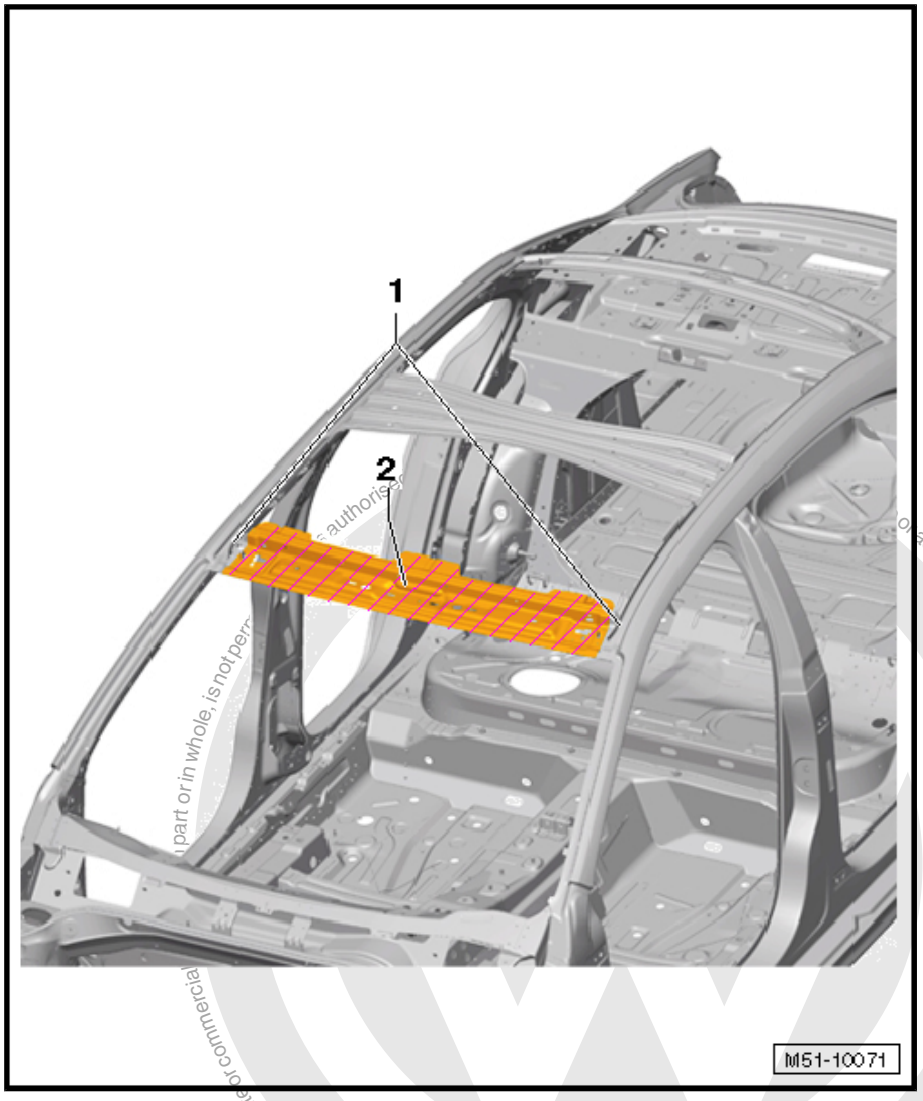
Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- The roof without a sunroof is already removed, refer to ⇒ “1 Roof, Removing and Installing, Vehicles without Sunroof”, page 108 .
- The roof with a sunroof is already removed, refer to ⇒ “2 Roof, Removing and Installing, Vehicles with Sunroof”, page 122 .

1 - Front Roof Cross Member

2 - Left and Right Bracket



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4.1 Tools

Note

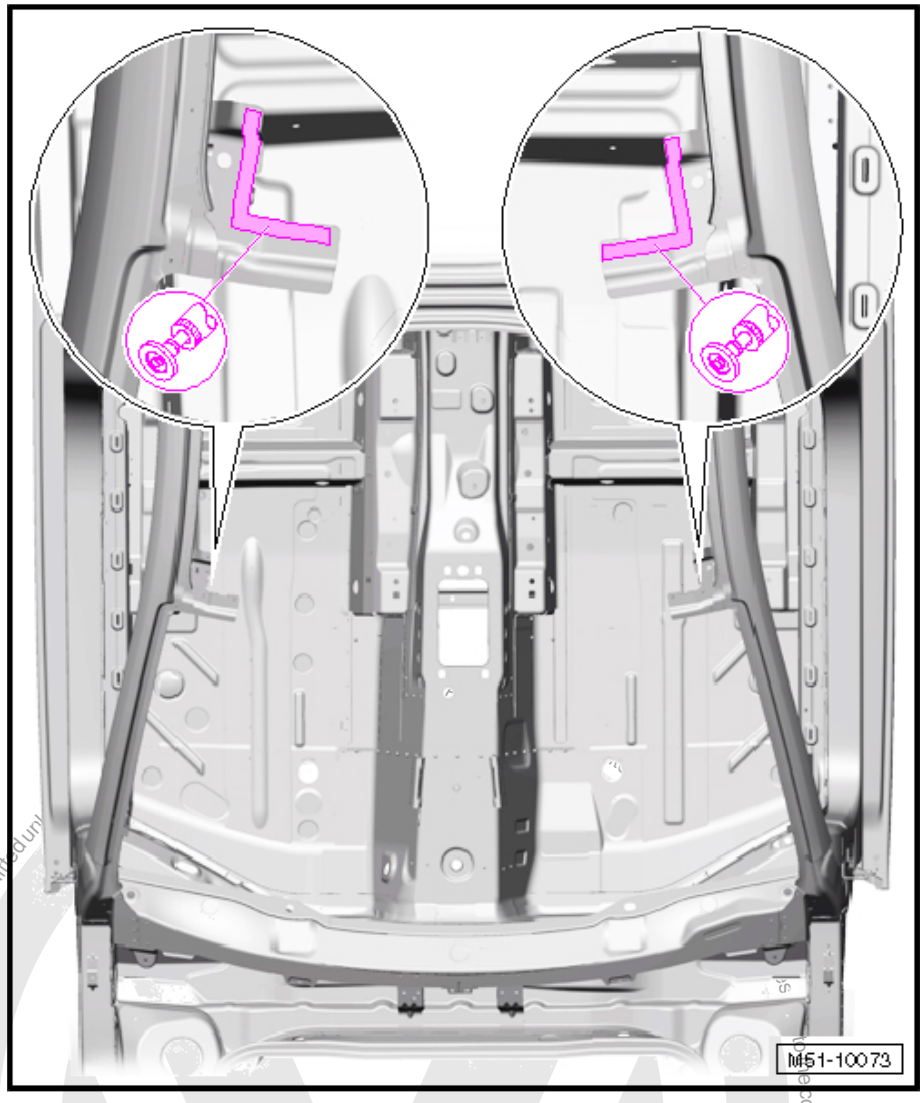
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

4.2 Removing

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– Cut the original joint for the left and right bracket.



– Remove residual material.

4.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "9.1 Tools", page 176 .

4.3.1 Welding

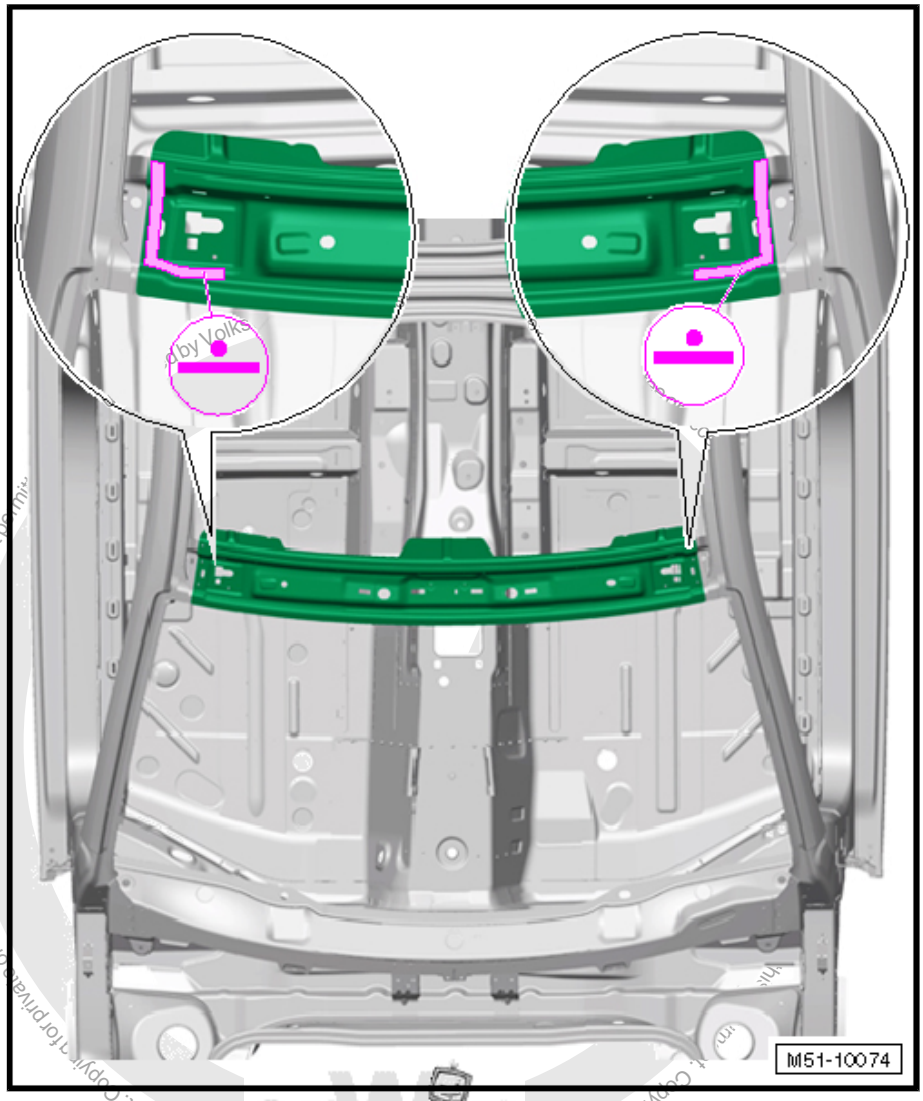
New Part

♦ Front roof cross member

– Align the new part and secure it in place.

– Check fit with roof.

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– Weld the front roof crossmember with a straight-line spot weld seam.
– Install the roof without a sunroof, refer to ⇒ “1.3 Installing”, page 111 .
– Install the roof with a sunroof, refer to ⇒ “2.3 Installing”, page 126 .

RO: 51 08 55 50

5 Roof Reinforcement, Replacing, Vehicles without Sunroof

WARNING

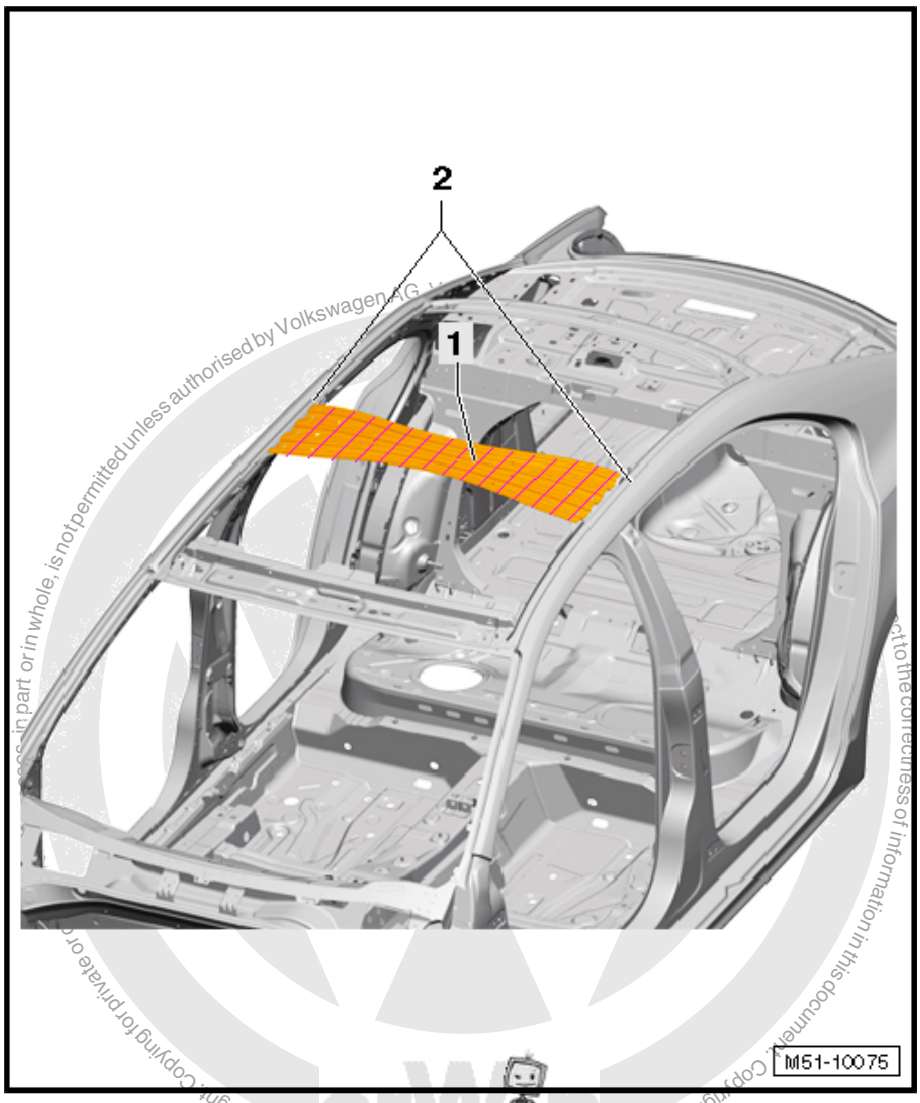
Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Roof already removed, refer to ⇒ "1 Roof, Removing and Installing, Vehicles without Sunroof", page 108 .

1 - Roof Reinforcement

2 - Left and Right Inner Side Panel



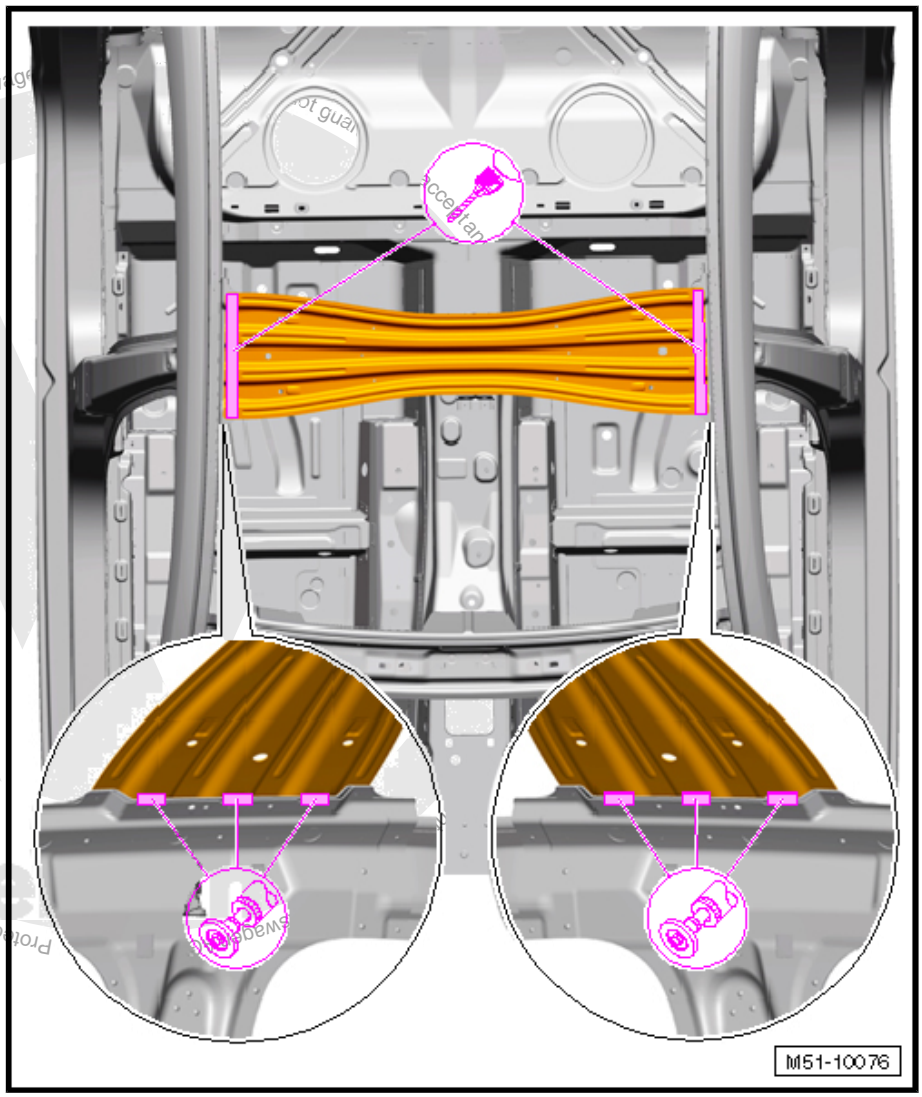
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5.1 Tools

Note

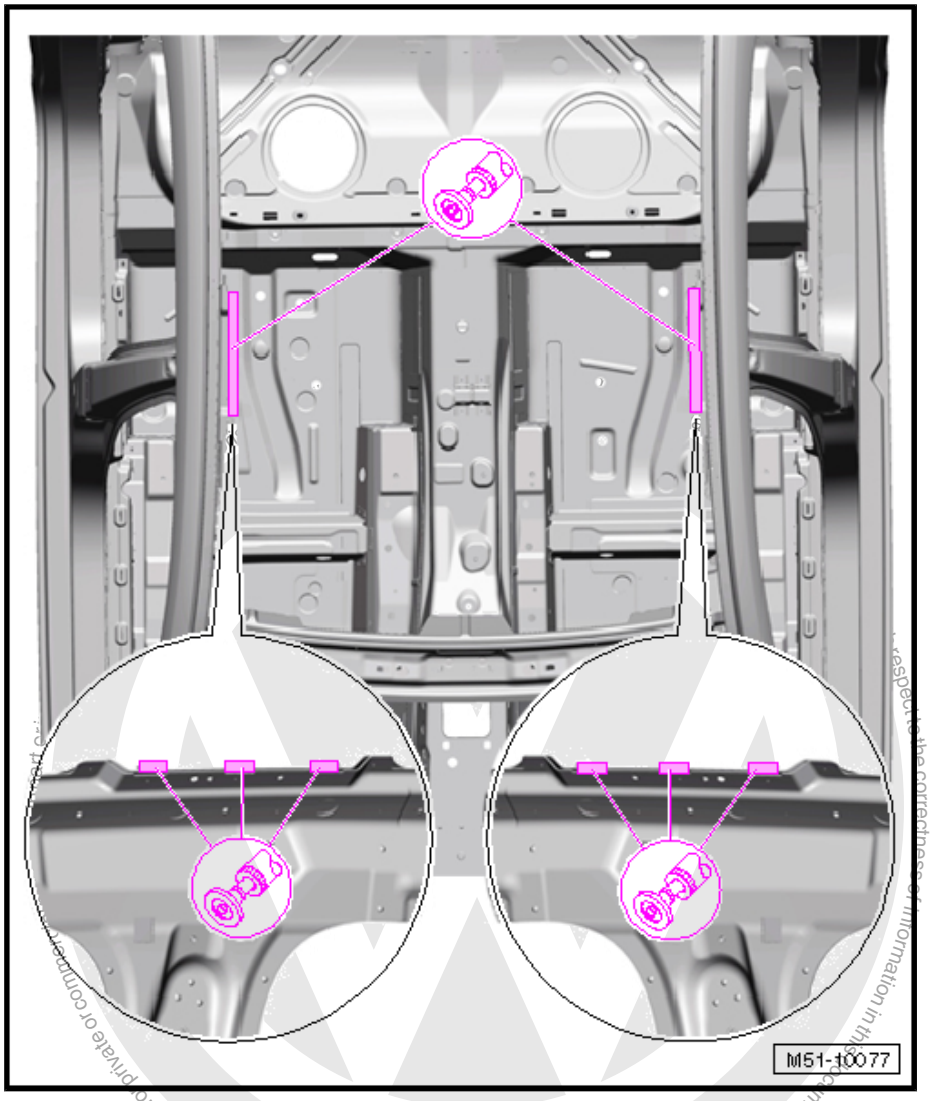
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

5.2 Removing



– Separate the original joint for the left and right inner side panels.

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– Remove residual material.

5.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "9.1 Tools", page 176 .

5.3.1 Welding

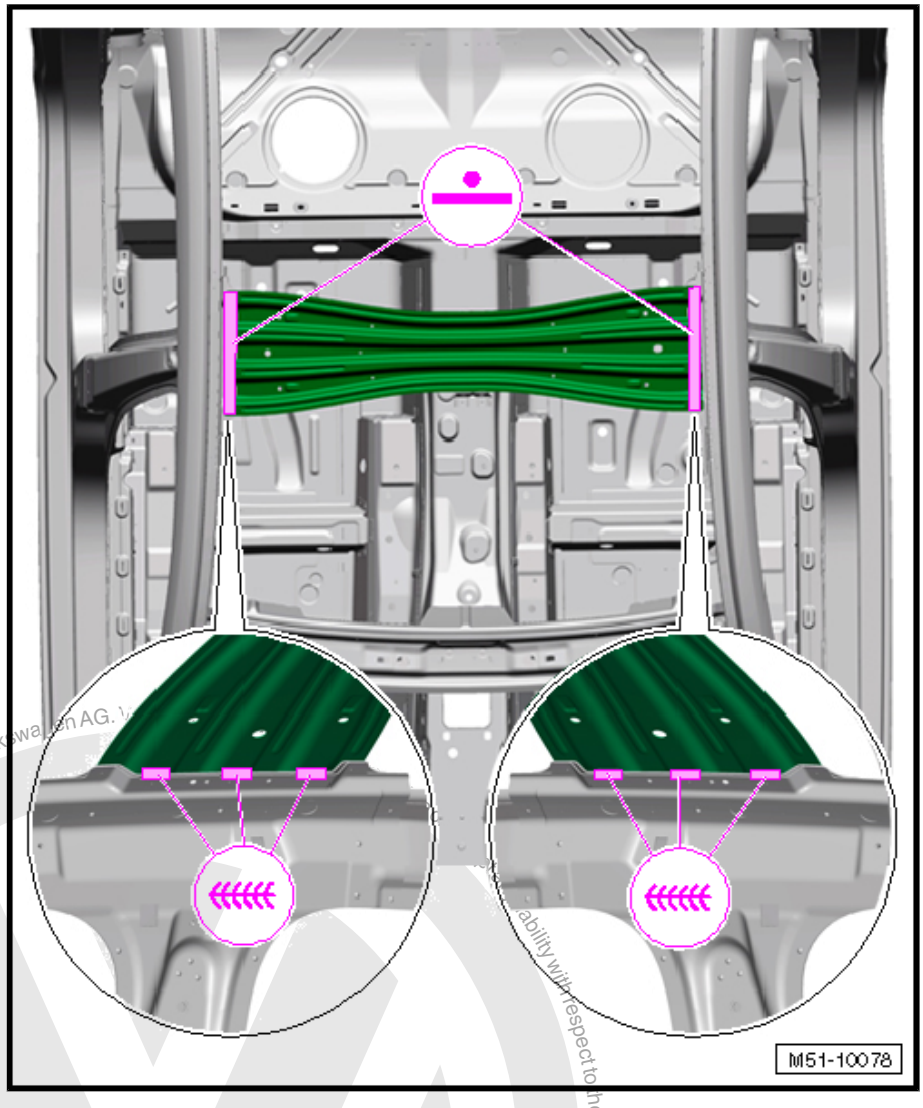
New Part

♦ Roof reinforcement

– Align the new part and secure it in place.

– Check fit with roof.

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– Weld the roof reinforcement with a straight-line spot weld seam and gas-shielded arc continuous weld seam.
– Install the roof, refer to ⇒ “1.3 Installing”, page 111 .

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RO: 51 09 55 50

6 Rear Roof Crossmember, Replacing

WARNING

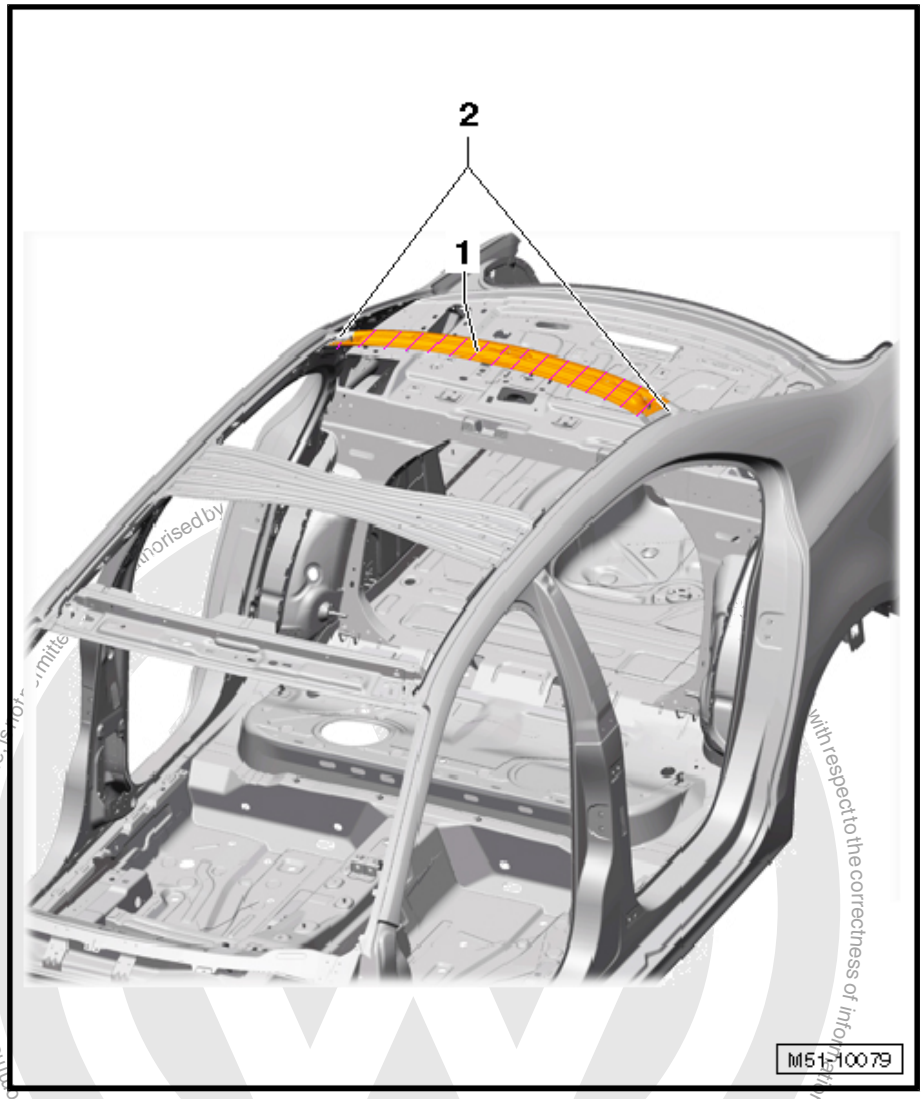
Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- The roof without a sunroof is already removed, refer to ⇒ "1 Roof, Removing and Installing, Vehicles without Sunroof", page 108 .
- The roof with a sunroof is already removed, refer to ⇒ "2 Roof, Removing and Installing, Vehicles with Sunroof", page 122 .

1 - Rear Roof Cross Member

2 - Left and Right C-Pillar Transition Part



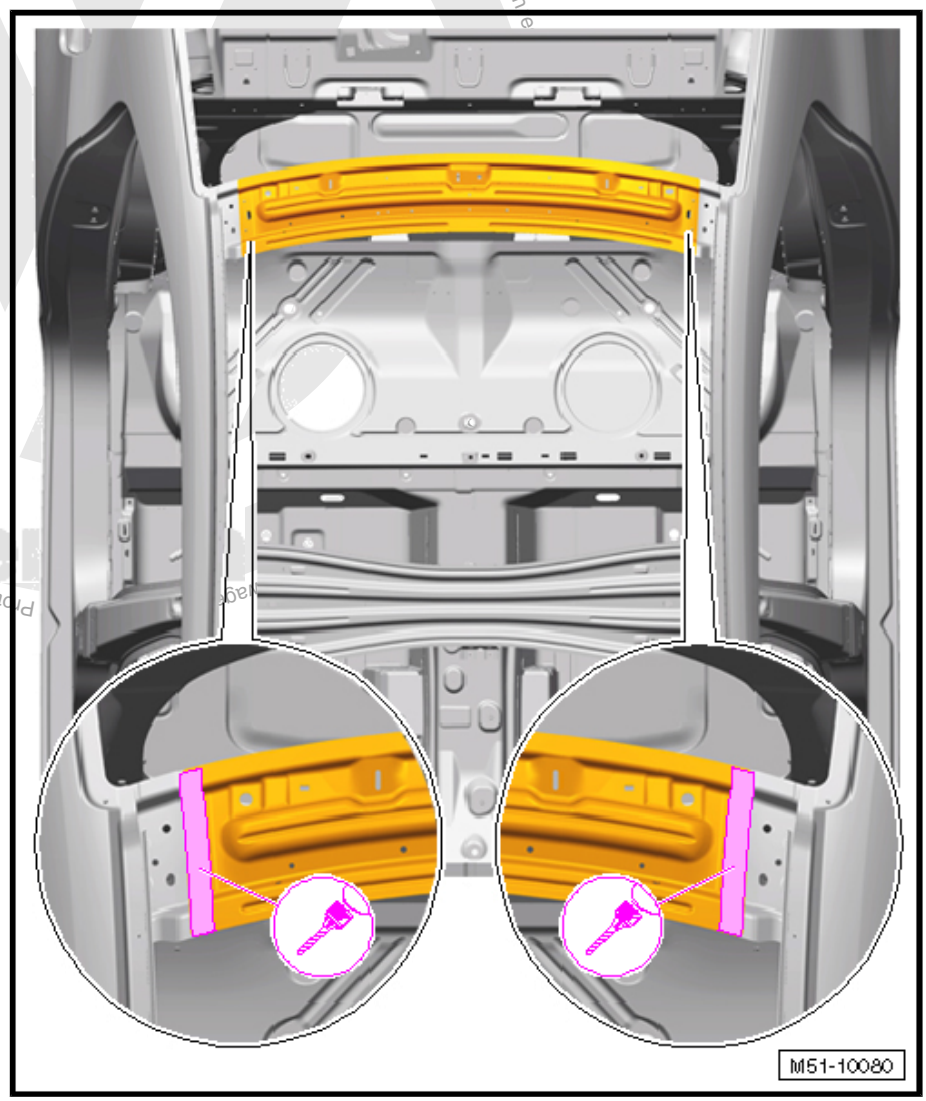
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6.1 Tools

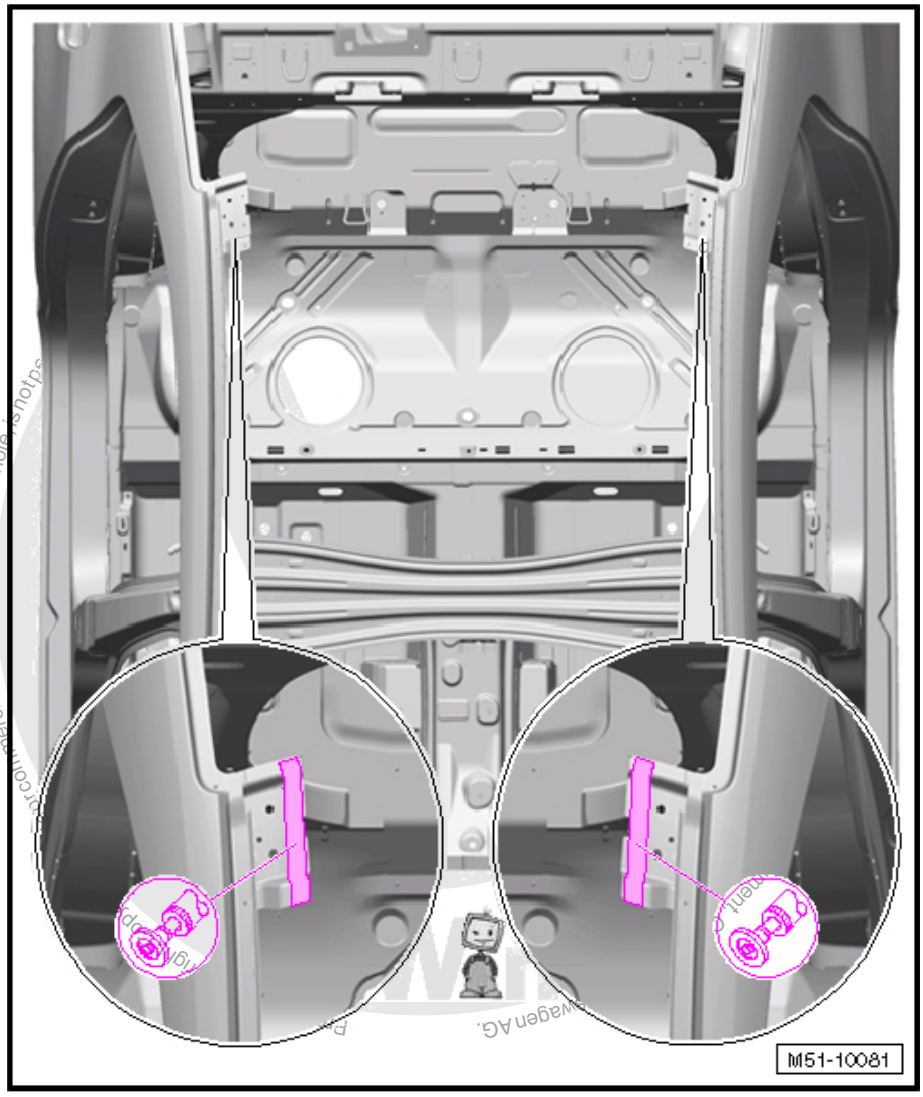
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

6.2 Removing



– Cut the original joint on the left and right C-pillar transition part



– Remove residual material.

6.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "9.1 Tools", page 176 .

6.3.1 Welding

New Part

♦ Rear roof cross member

– Align the new part and secure it in place.

– Check fit with roof.



– Weld the rear roof crossmember with a straight-line spot weld seam.
– Install the roof without a sunroof, refer to ⇒ “1.3 Installing”, page 111 .
– Install the roof with a sunroof, refer to ⇒ “2.3 Installing”, page 126 .

RO: 51 37 55 00

7 A-Pillar, Replacing

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - A-Pillar

2 - Molded Foam Part

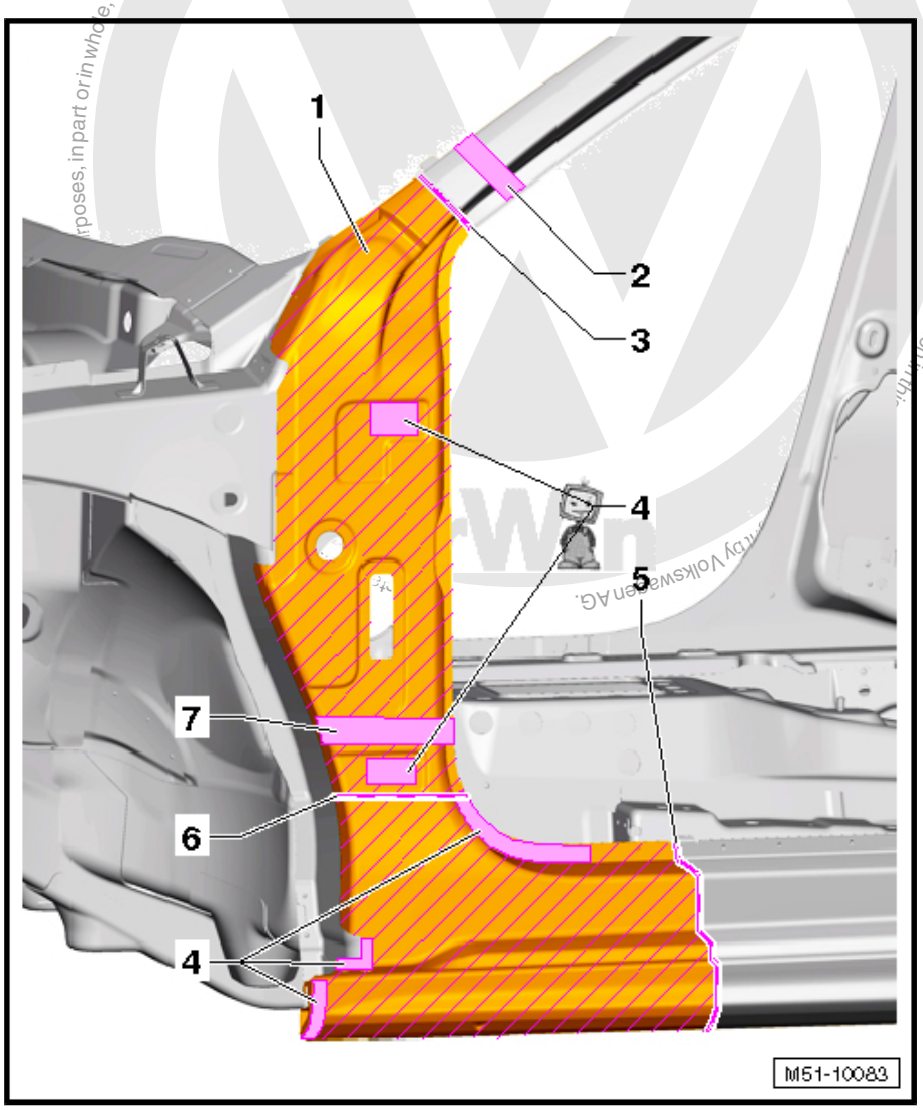
3 - Upper Separating Cut

4 - Bonded Area

5 - Separating Cut for Sill Panel

6 - Separating Cut, Part Replacement Possible

7 - Molded Foam Part



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7.1 Tools

Note

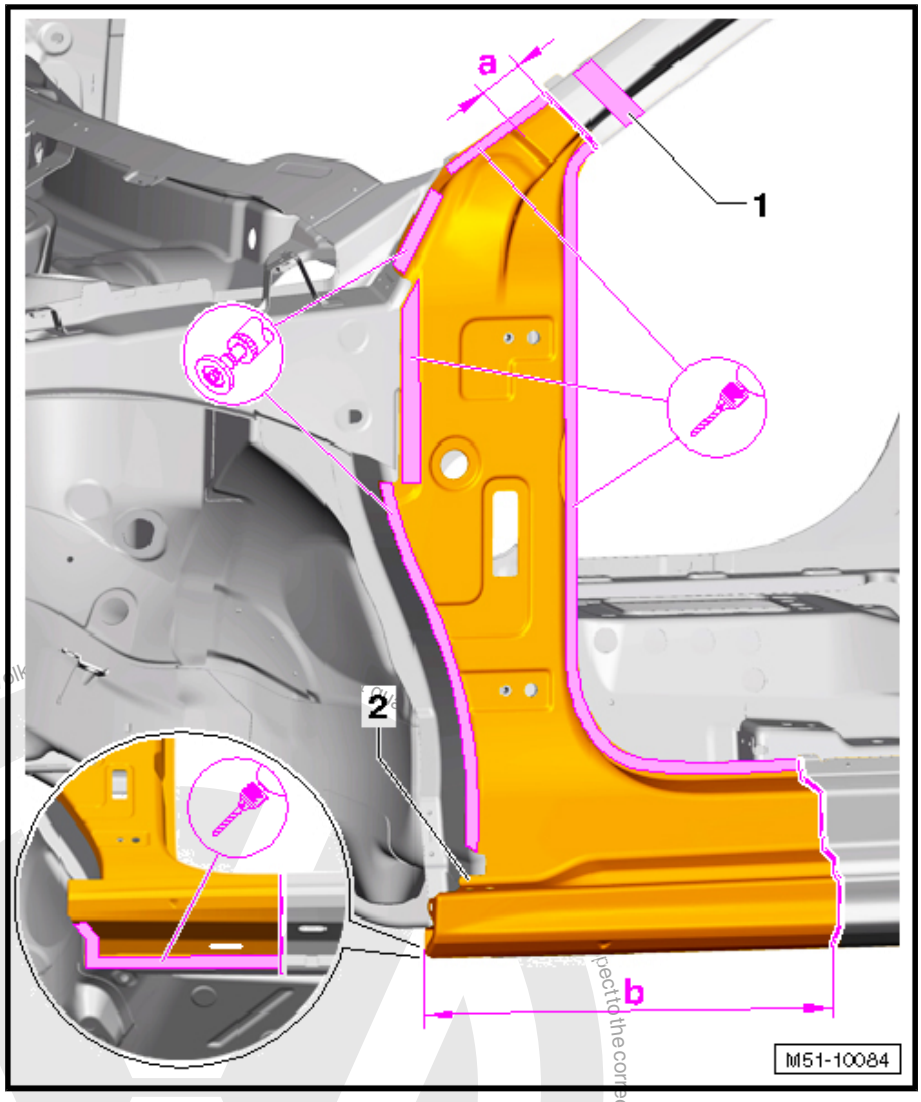
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

7.2 Removing

Note

- *Be sure not to damage the metal panels behind it when making the separating cut.*
- *If the A-pillar reinforcement is damaged, then is must always be replaced.*
- *A-pillar reinforcement must not be re-welding for safety reasons »crash safety«!*

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– Remove the rivet nut -2-.
– Place separating cuts as shown.

Dimension -a- = 30 mm

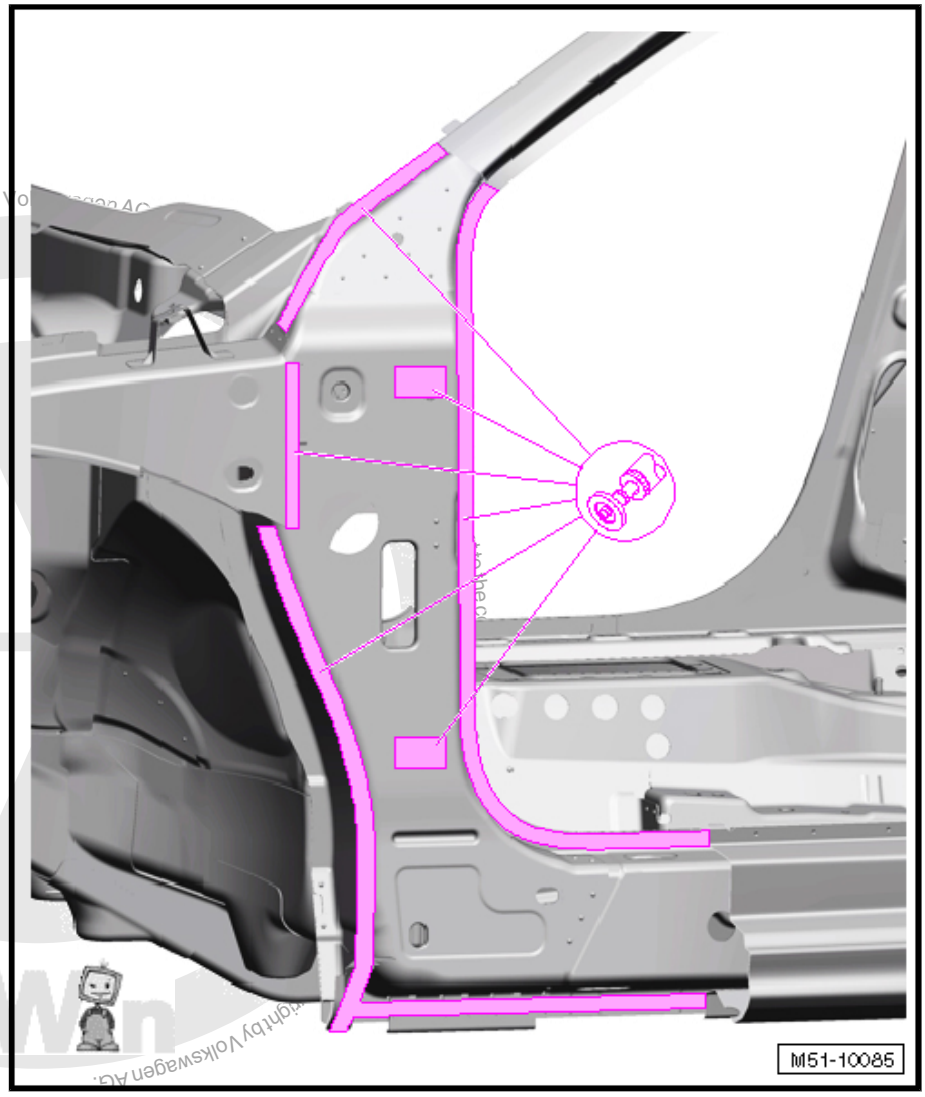
Dimension -b- = 350 mm

– Separate the original joint.

Note

Foam residue must be removed as much as possible before sanding work.

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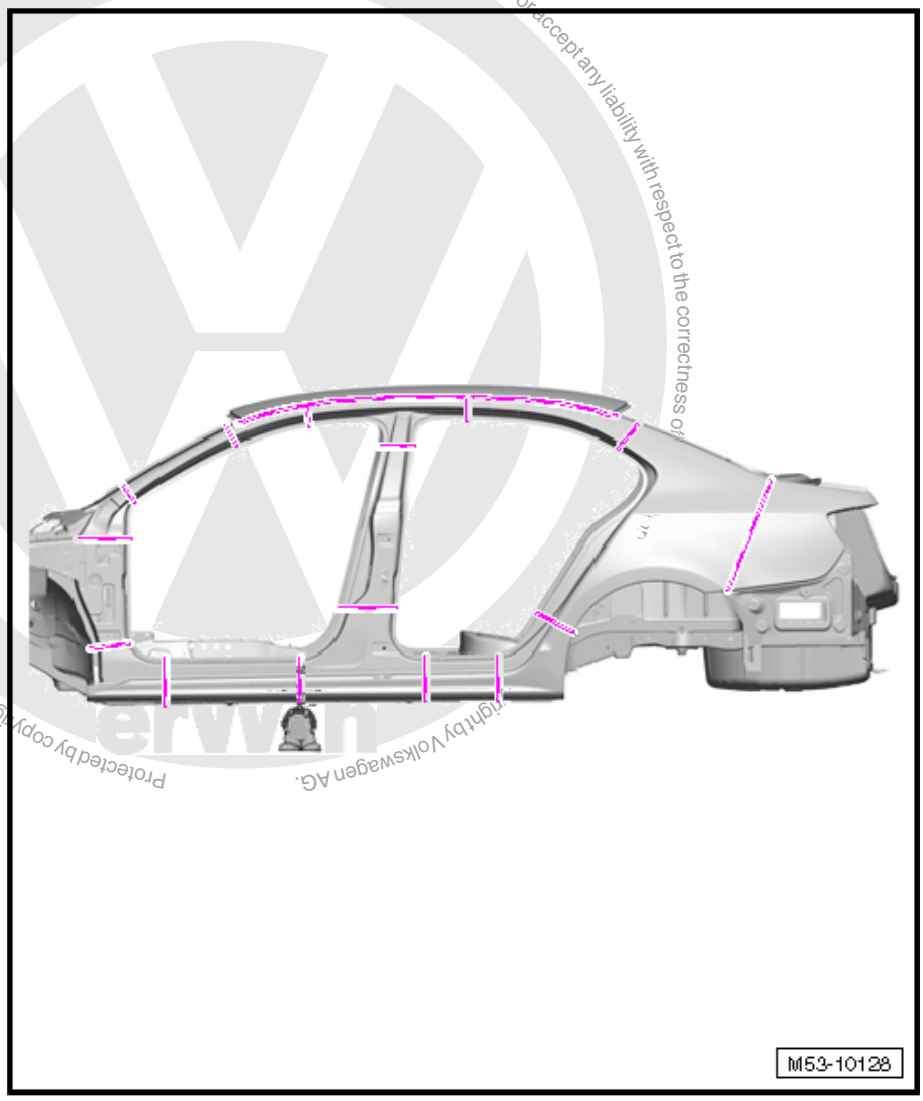
– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.
– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
– Lightly sand the adhesive surfaces in the connection.

7.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ *"9.1 Tools", page 176* *.*

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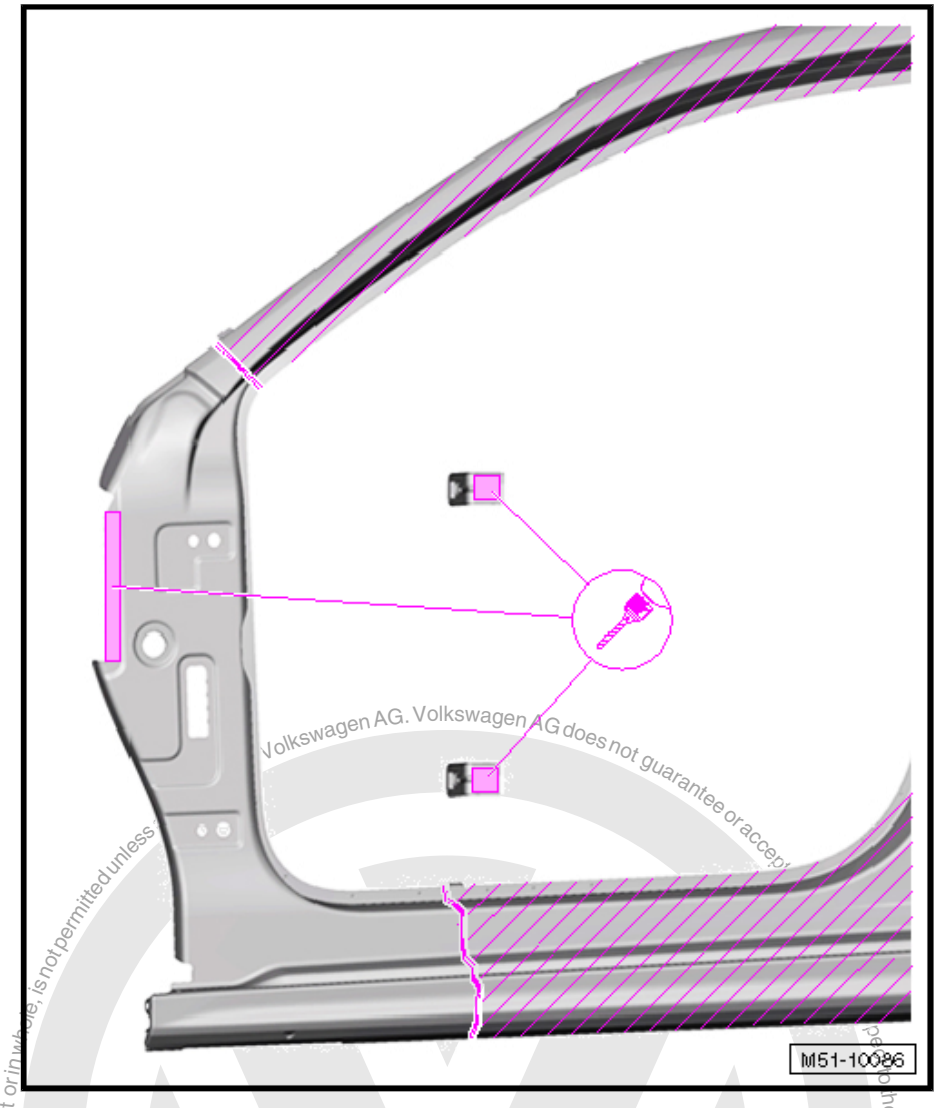
Note

MIG soldered seams/gas-shielded arc continuous weld seam are permitted on the separating cuts shown in the illustration.

7.3.1 Preparing New Parts

New Part

- Sub-part, front side panel (replacement part name: A-pillar sub-part with sill panel)
- Fender mount
- 2K Body Adhesive - D 180 KD3 A2-
- Molded Foam Part



– Transfer separating cuts onto new part and cut to shape.
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

7.3.2 Molded Foam Parts

Observe repair notes.

Molded foam parts, refer to ⇒ General Information; Body Repairs, Body Collision Repair ; General Information, Molded Foam Parts

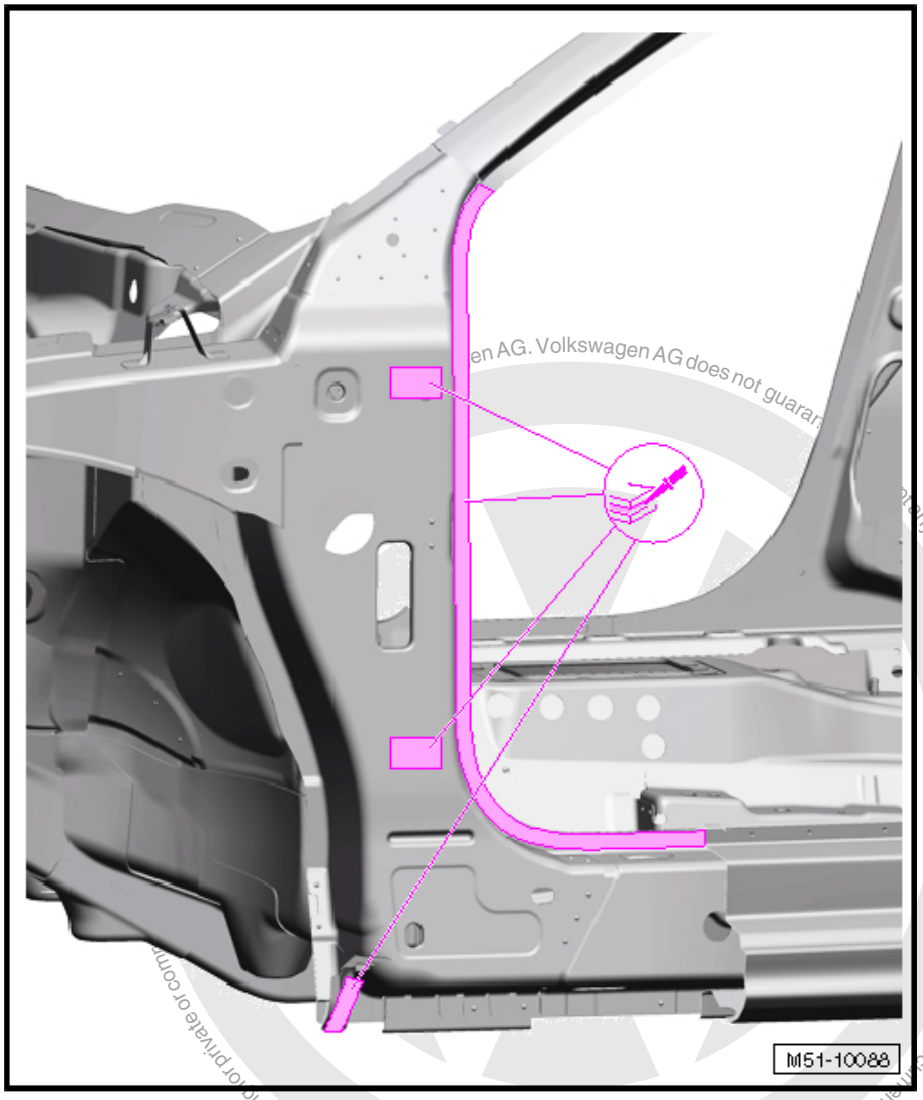
Position of molded foam parts, refer to
⇒ “5 Molded Foam Parts”, page 7 .

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7.3.3 Welding

Note

- *New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.*
- *The holes for the hinge mount must be cleaned after applying the adhesive.*



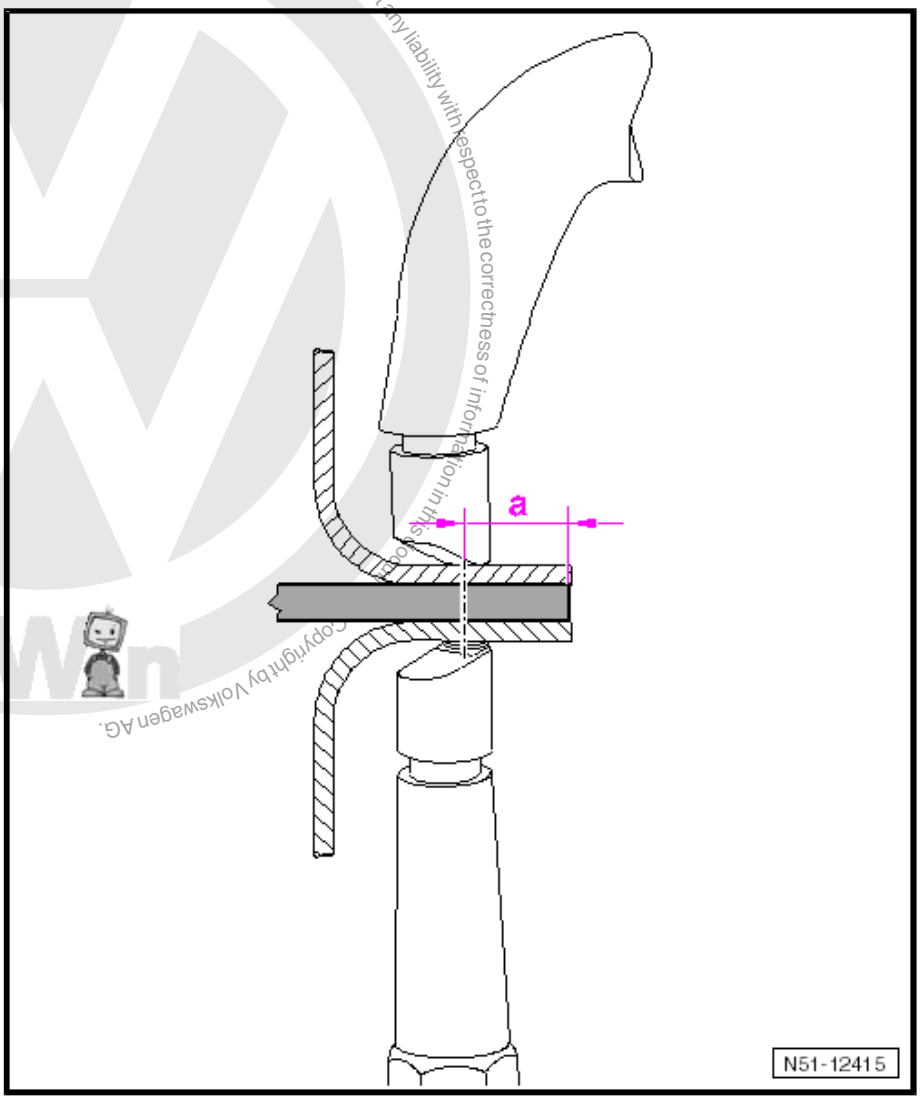
– Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.

Note

- *High-strength/highest strength hot formed is used on the A-, B- and C-pillars. The welding flanges in these areas are approximately 13 mm wide.*
- *If the weld points are placed on the edge of the hot-formed steel panels, the high temperatures will change the structure of the steel and this will negatively affect the crash worthiness.*

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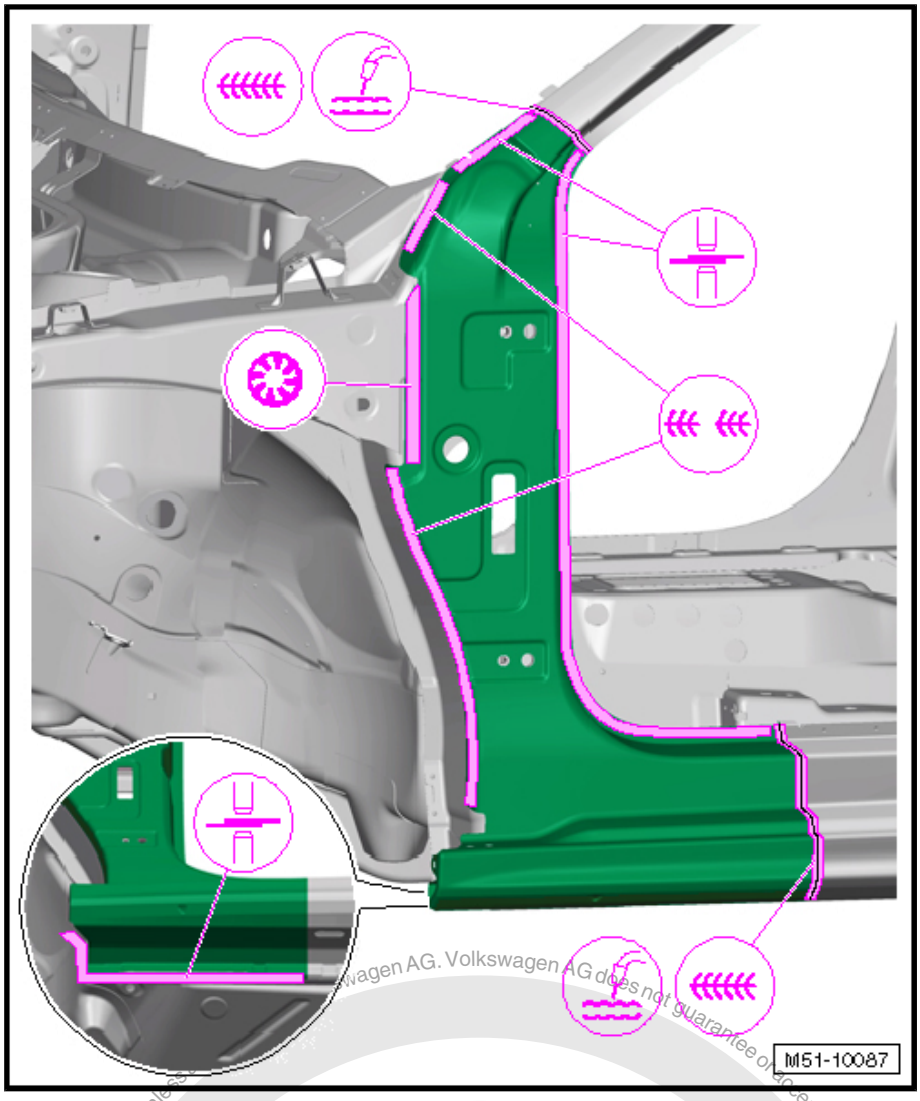


The weld points must be made as far as possible to the inside.

- Dimension -a- (8 mm) can be reached with beveled weld caps.

– Fit the new part to vehicle standing on its wheels or on an Alignment Bracket Set and secure.

– Check fit with attachments.



– Weld the separation cuts, either MIG-L stitch weld seam or a gas-shielded arc continuous weld seam

Note

Both weld symbols are shown in the illustration.

– Weld the door opening, windshield opening and the sill panel with a straight-line spot weld seam.
– Weld the A-pillar to the A-pillar reinforcement with a gas-shielded arc plug weld seam and gas-shielded arc continuous weld seam (staggered).

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– Check the fit between the fender mount to the fender.
– Weld the fender bracket with a gas-shielded arc plug weld seam.

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RO: 51 38 55 50

8 A-Pillar Reinforcement, Replacing Partial Section

Caution

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- A-pillar partial section already removed, refer to ⇒ “7 A-Pillar, Replacing”, page 158 .

1 - A-Pillar Reinforcement

2 - Separating Cut

3 - Door Strap Reinforcement

4 - Adhesive Areas

5 - Molded Foam Part

6 - Lower Hinge Reinforcement

Is also removed.

7 - Molded Foam Part

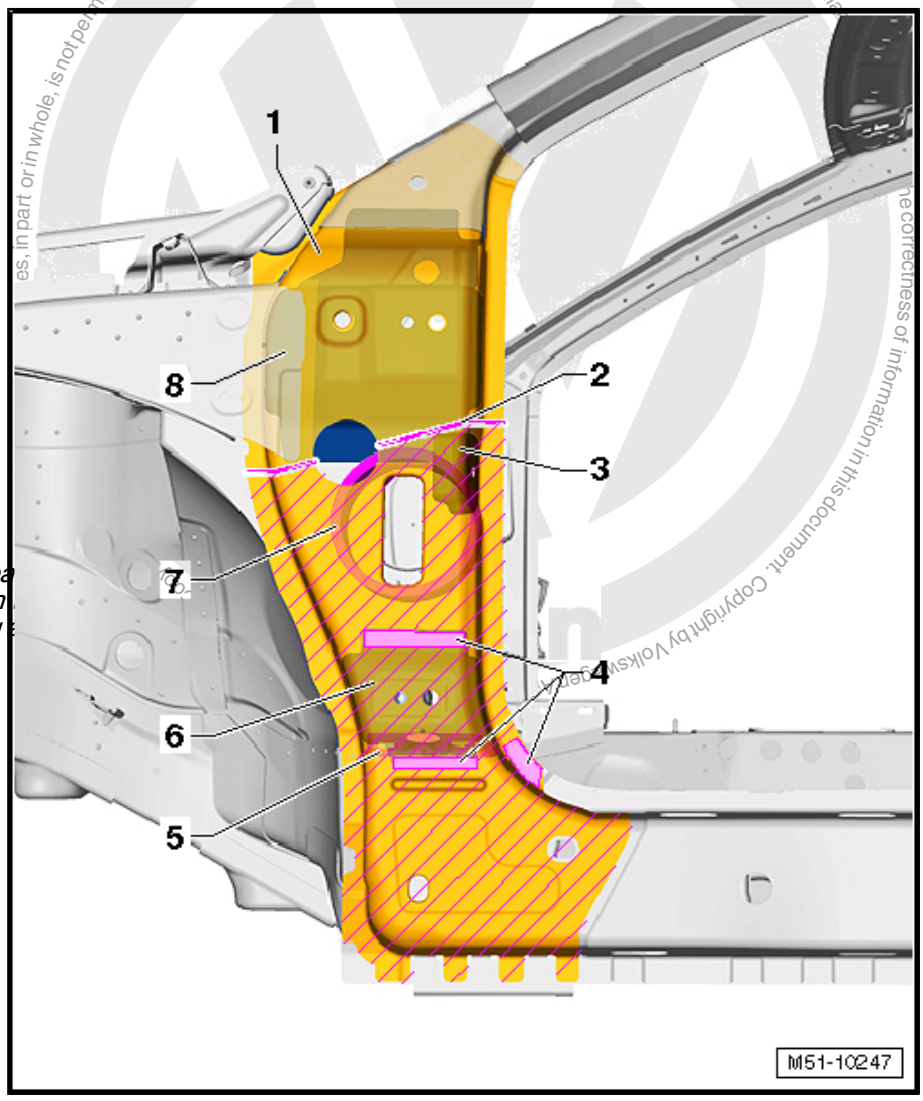
Installation depending on the equipment.

Note

Remove the molded foa through the opening on pillar before performing or separating.

8 - Upper Hinge Reinforcement

Is also not removed.



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8.1 Tools

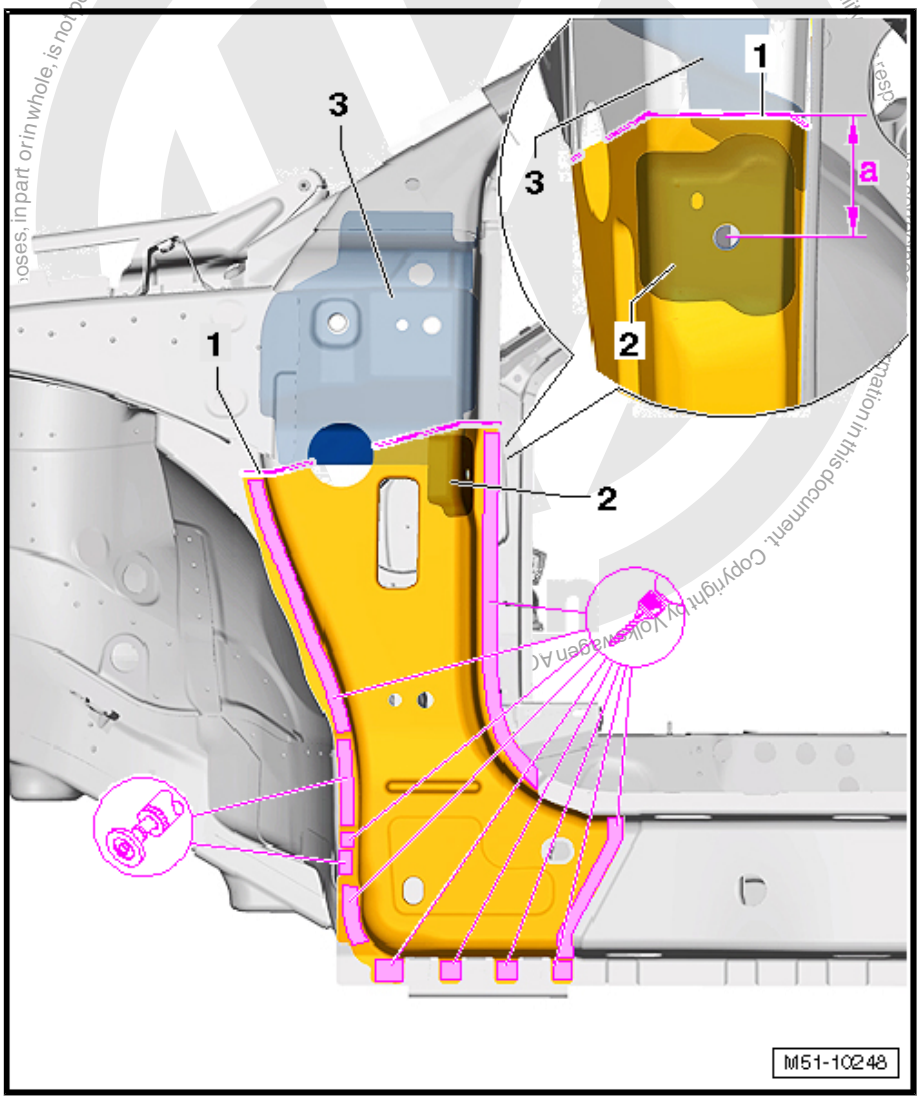
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

8.2 Removing

Note

Be sure not to damage the metal panels behind it when making the separating cut.



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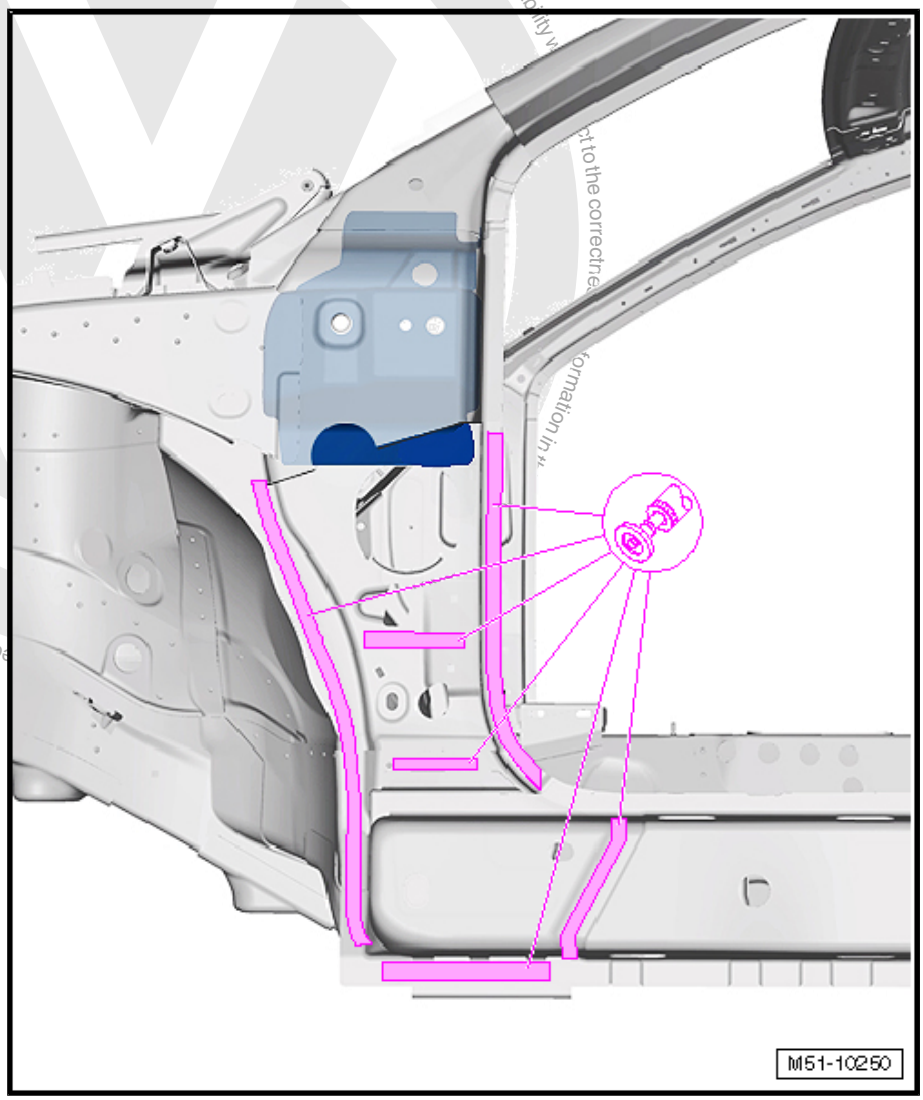
– Perform the separation cut -1- as shown between the door strap reinforcement -2- and the upper hinge reinforcement -3-.

Dimension -a- = 50 mm

– Separate the original joint.

Note

Foam residue must be removed as much as possible before sanding work.



– Remove residual material.

– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

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8.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ “8.1 Tools”, page 169 .

8.3.1 Preparing New Parts

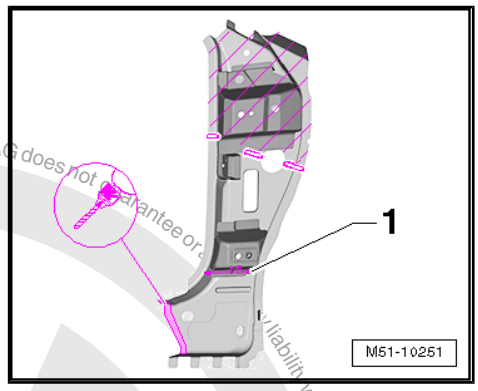
New Part

- ♦ A-pillar reinforcement
- ♦ Molded Foam Part
- ♦ 2K Body Adhesive - D 180 KD3 A2-

– Transfer separating cut onto new part and cut to shape.

– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

– Insert the molded foam part -1-, refer to ⇒ “5 Molded Foam Parts”, page 7 .



8.3.2 Molded Foam Parts

Observe Repair Notes.

Molded foam parts, refer to ⇒ General Information; Body Repairs, Body Collision Repair ; General Information, Molded Foam Parts

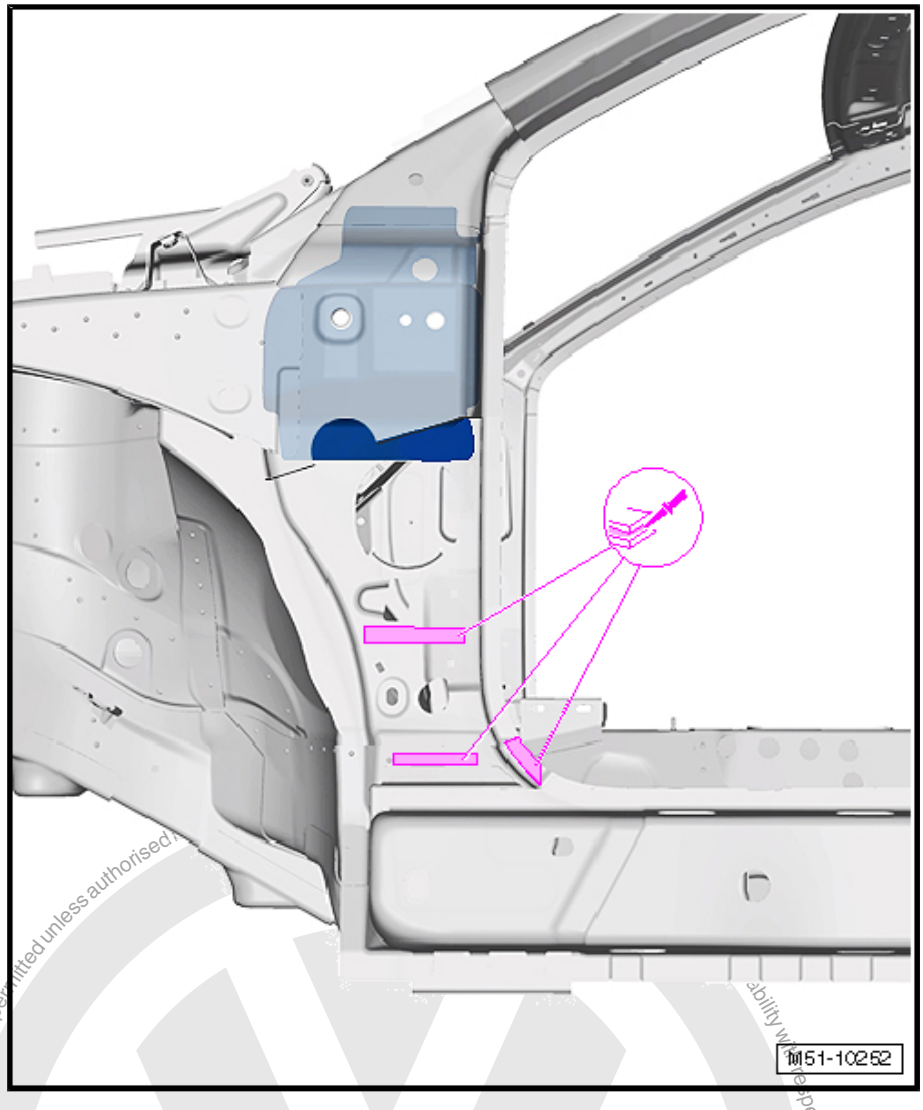
Position of molded foam parts, refer to ⇒ “5 Molded Foam Parts”, page 7 .

8.3.3 Welding

Note

New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

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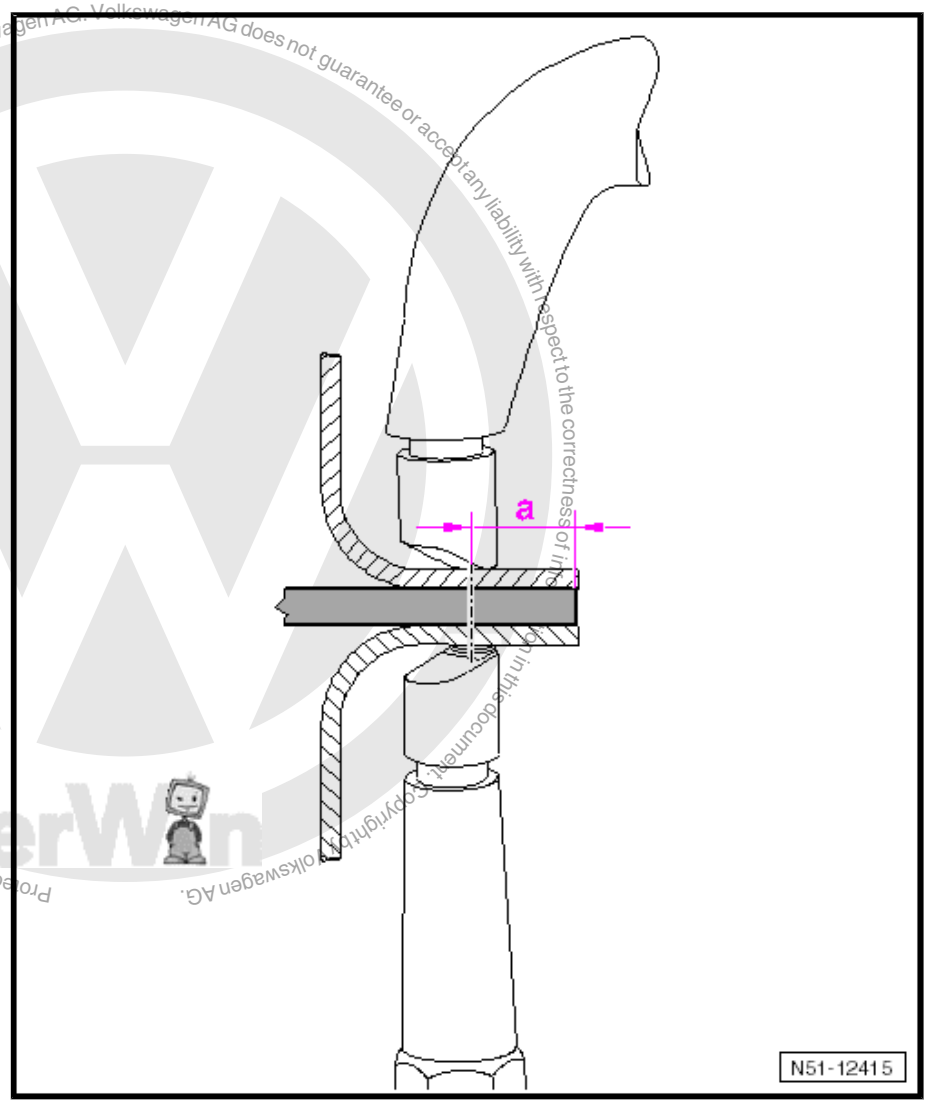
– Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.

Note

- *High-strength/highest strength hot formed is used on the A-, B- and C-pillars. The welding flanges in these areas are approximately 13 mm wide.*
- *If the weld points are placed on the edge of the hot-formed steel panels, the high temperatures will change the structure of the steel and this will negatively affect the crash worthiness.*

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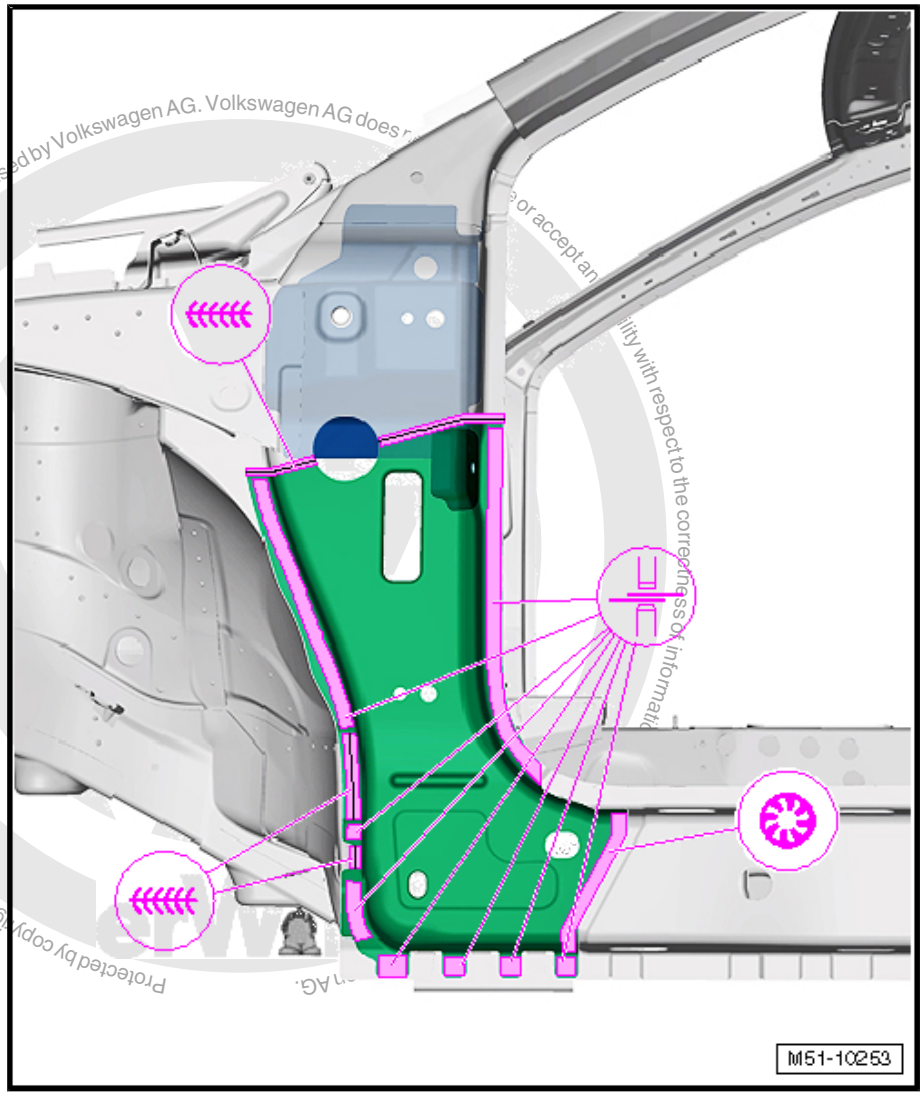


The weld points must be made as far as possible to the inside.

- Dimension -a- (8 mm) can be reached with beveled weld caps.

– Fit new part to vehicle standing on Straightening Bracket Set and secure.

– Check fit with attachments.



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- Weld in A-pillar reinforcement, straight-line spot weld seam inverter and gas-shielded arc continuous weld seam.
- Weld the joint to sill panel reinforcement with a gas-shielded arc plug weld seam.
- Weld the separating cut using a gas-shielded arc continuous weld seam.
- Install the A-pillar, refer to ⇒ “7.3 Installing”, page 161 .

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RO: 51 41 55 00

9 B-Pillar, Replacing

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - B-Pillar

2 - Bonded Area

3 - Molded Foam Part

Note

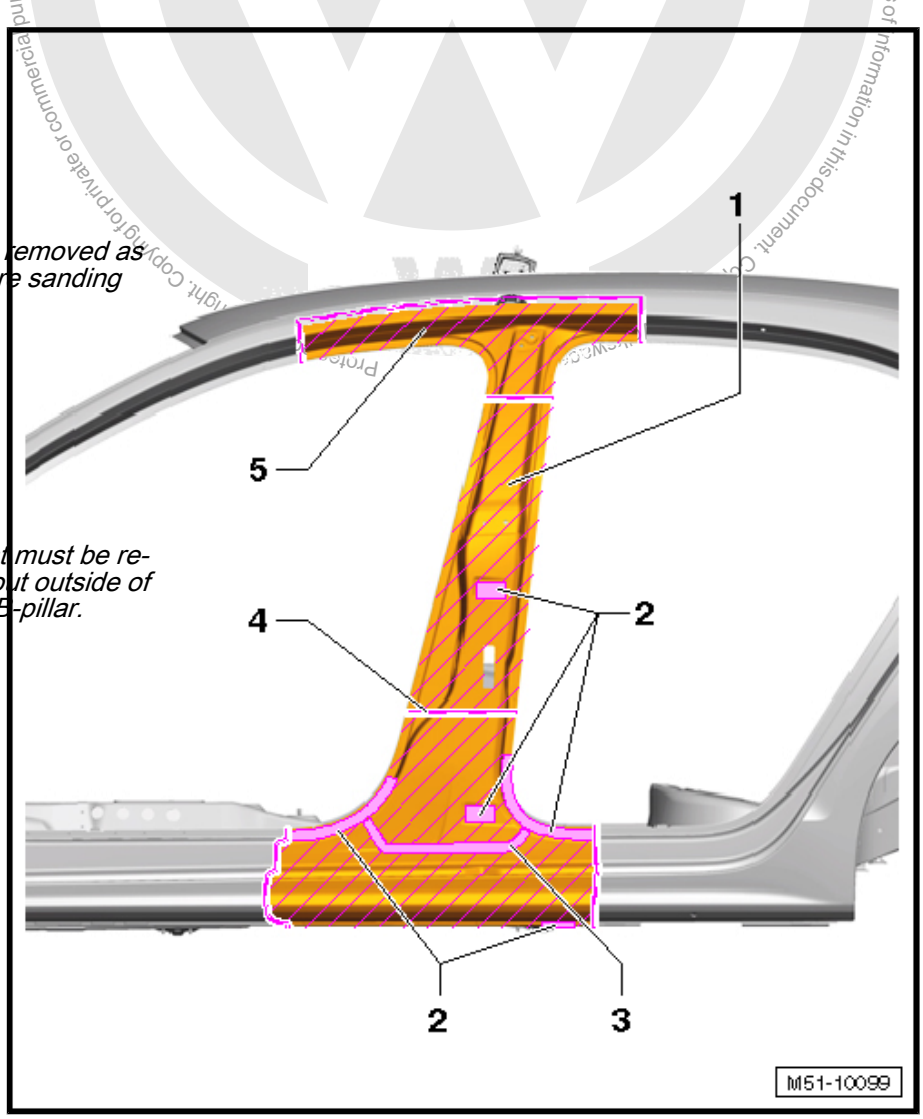
Foam residue must be removed as much as possible before sanding work.

4 - Separating Cut, Part Replacement Possible

5 - Expanded Repair Area

Note

If B-pillar reinforcement must be replaced, it must be cut out outside of area when cutting out B-pillar.



9.1 Tools

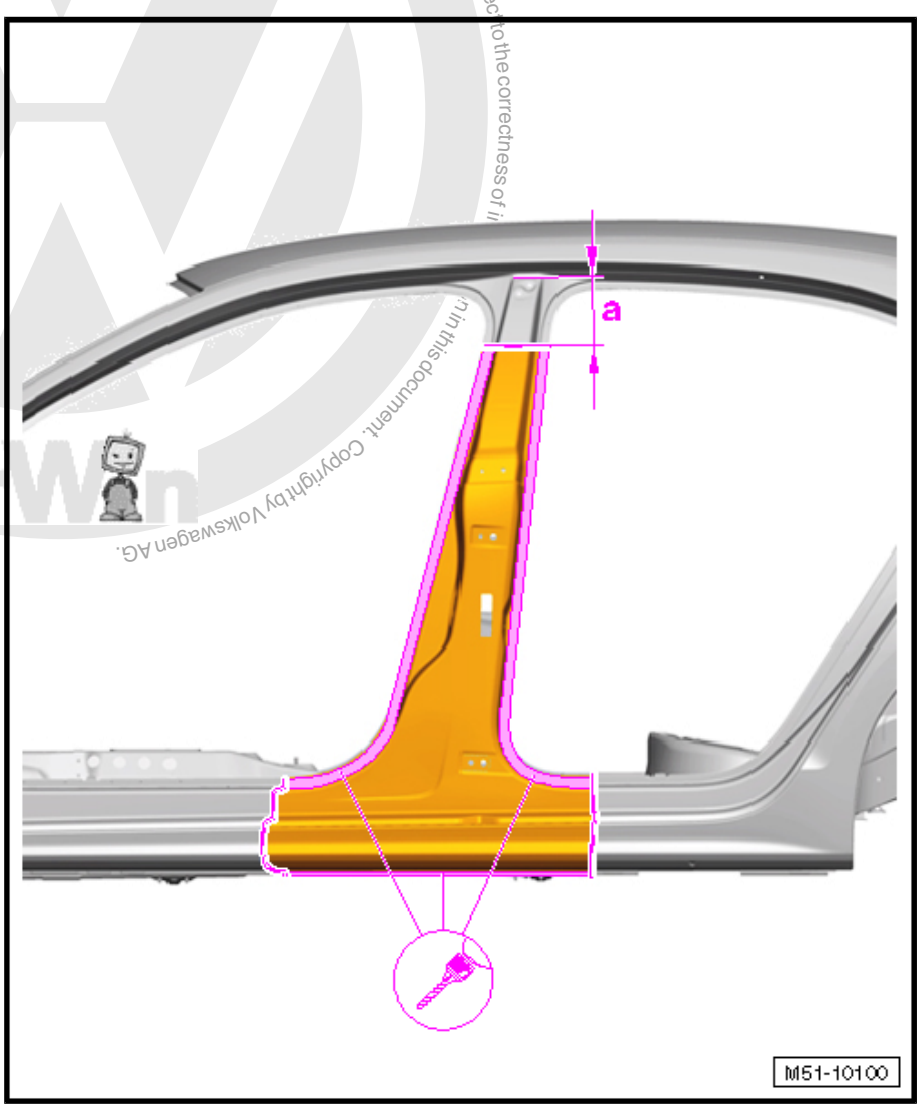
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

9.2 Removing

Note

- *Be sure not to damage the metal panels behind it when making the separating cut.*
- *If the B-pillar reinforcement is damaged, then is must always be replaced.*
- *B-pillar reinforcement must not be re-welded for safety reasons »crash safety«!*
- *Pay attention to the replacement part separation cut when making the separation cuts.*



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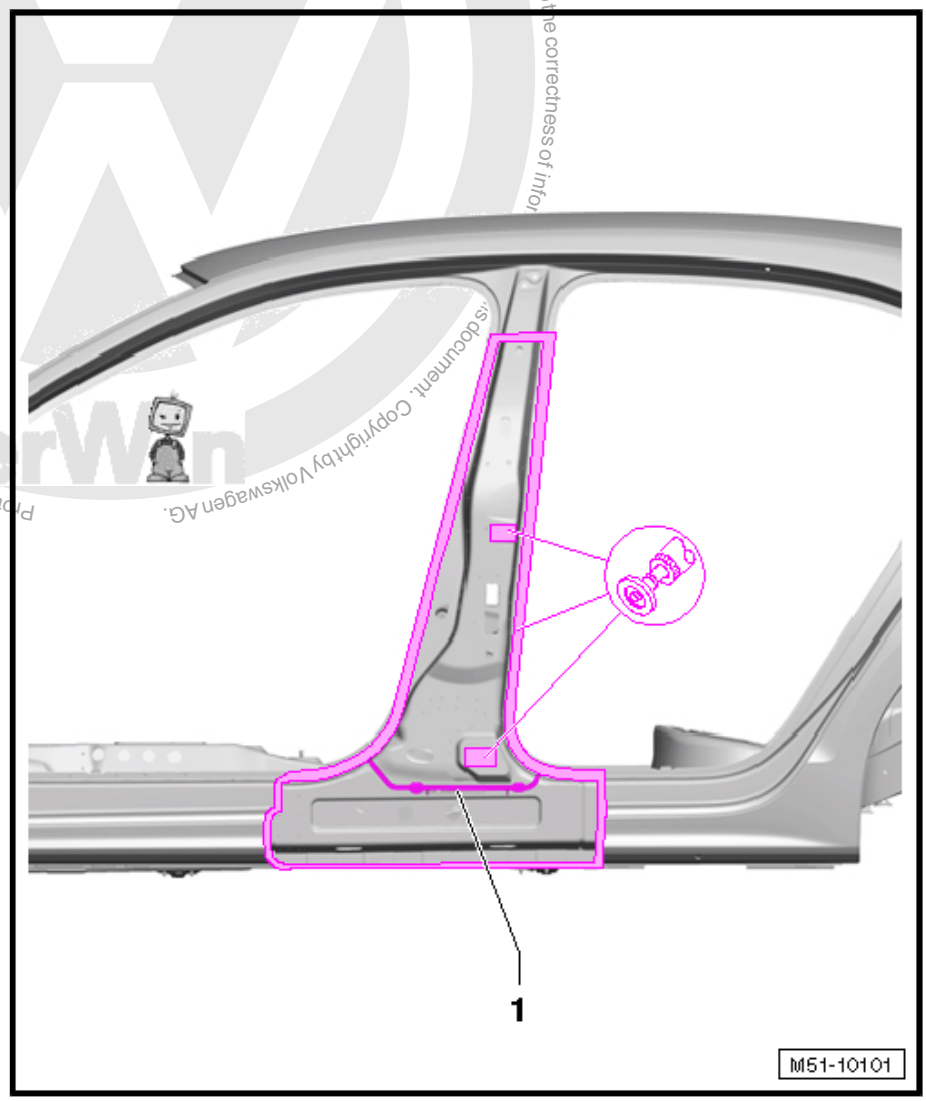
– Place separating cuts as shown.

Dimension -a- = 150 mm

– Separate original joint in door cut-outs and at sill panel.

Note

Foam residue -1- must be removed as much as possible before sanding work.



– Remove residual material.

– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.

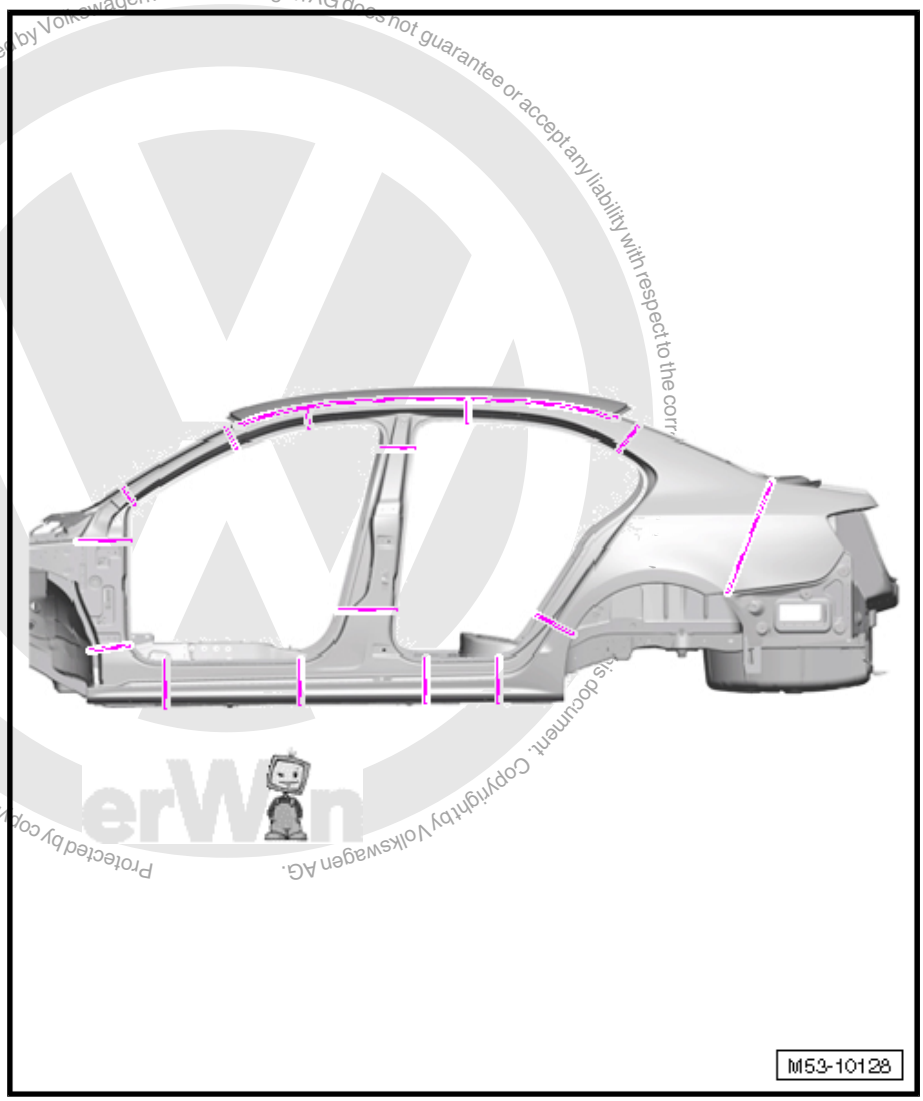
– Lightly sand the adhesive surfaces in the connection.

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9.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "9.1 Tools", page 176 .



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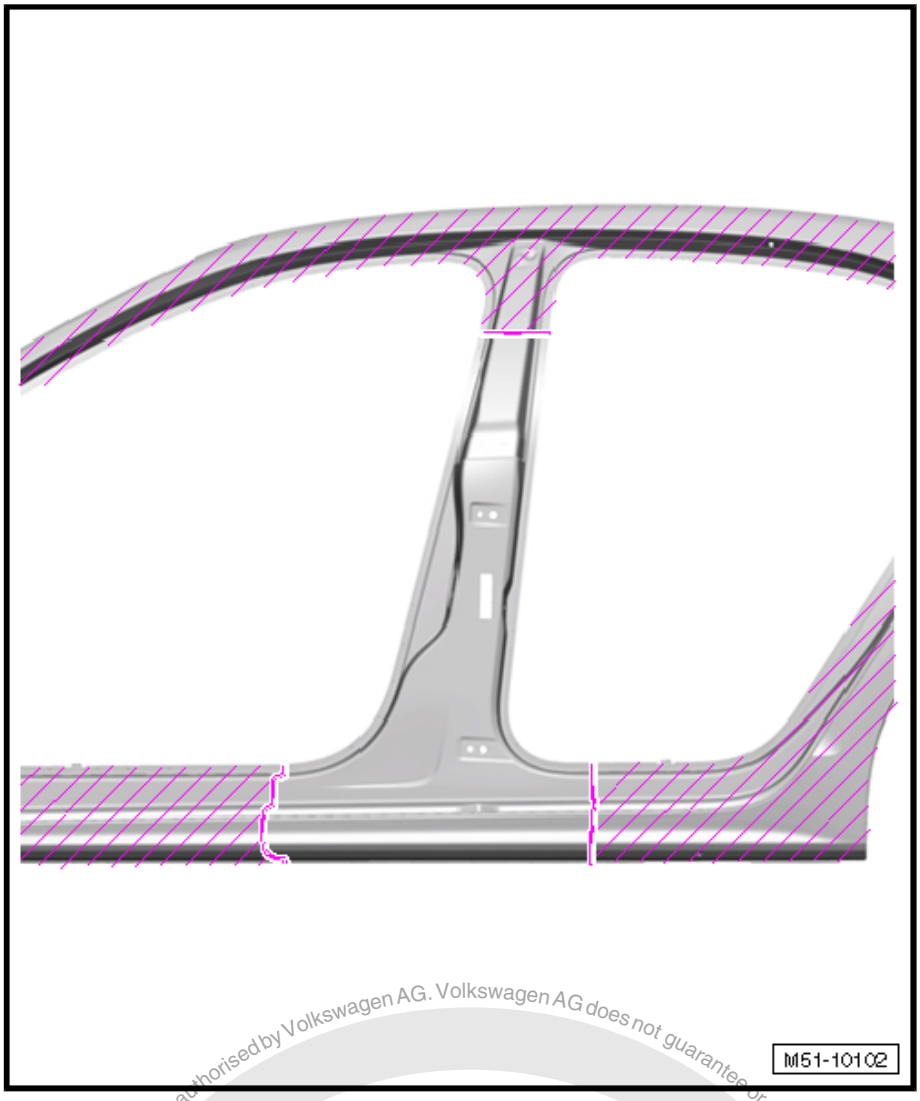
Note

MIG soldered seams/gas-shielded arc continuous weld seam are permitted on the separating cuts shown in the illustration.

9.3.1 Preparing New Parts

New Part

- Side Panel
- Molded Foam Part
- 2K Body Adhesive - D 180 KD3 A2-



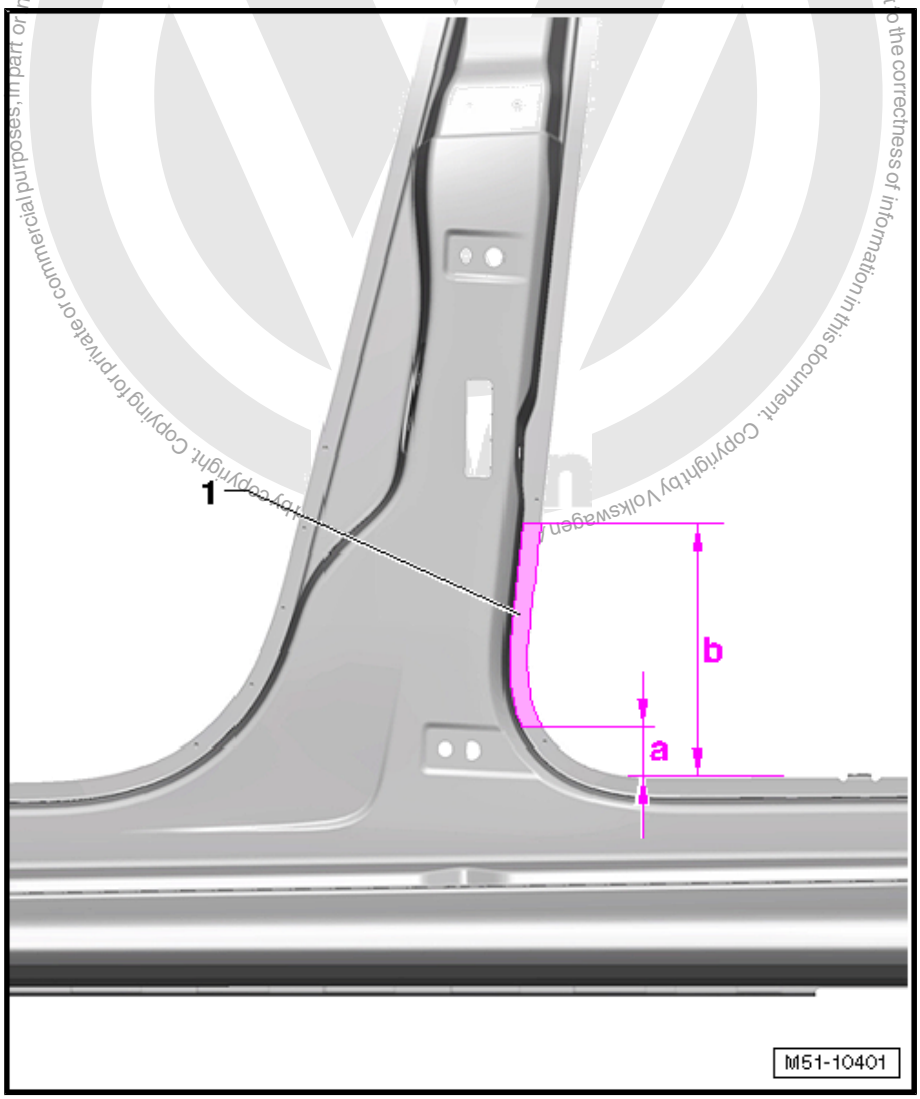
– Transfer separating cut onto new part and cut to shape.

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9.3.2 Marking Area in Which Welding Must Not Be Performed

Note

- *For reasons of safety »crash safety«, area -1- marked in the illustration must not be welded when welding in B-pillar.*
- *It is important to maintain the indicated dimensions.*



– Mark the area -1- on the outer B-pillar where welding is not permitted.

- Dimension -a- = 40 mm
- Dimension -b- = 240 mm

9.3.3 Molded Foam Parts

Observe repair notes.

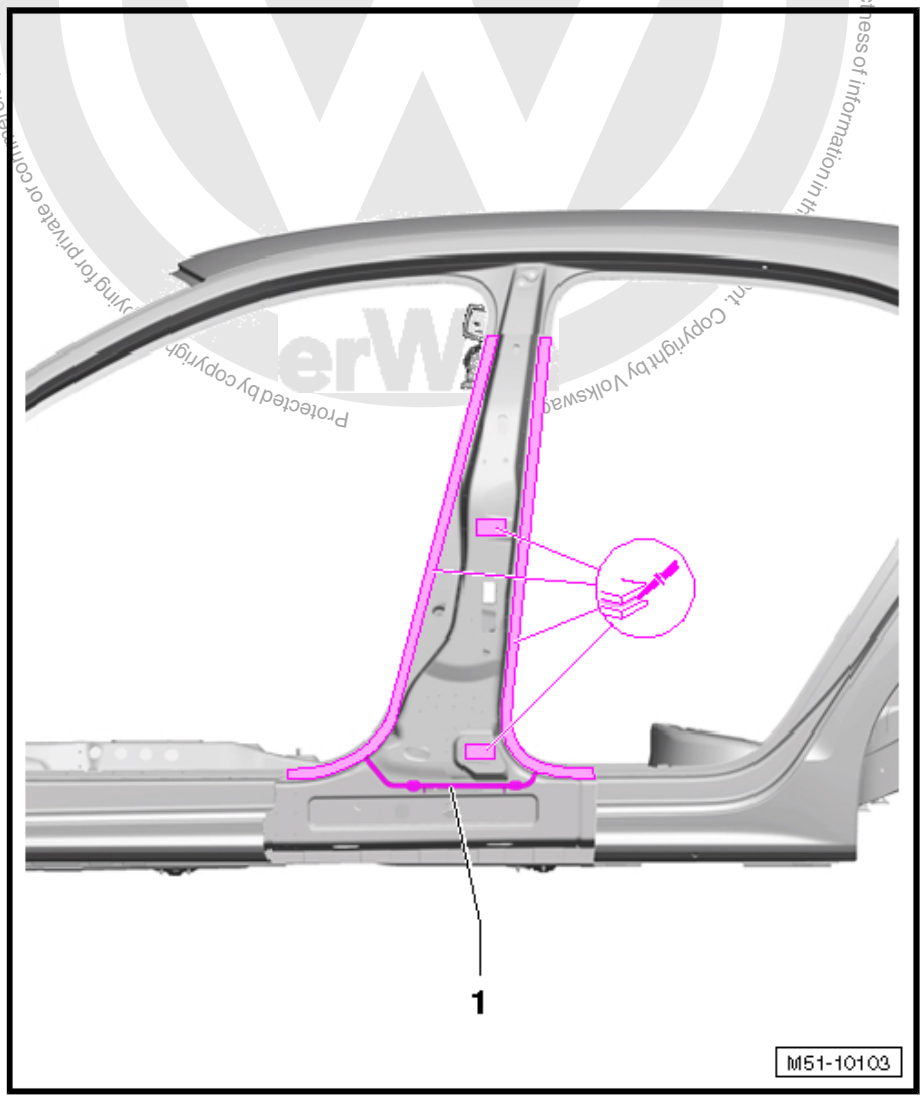
Molded foam parts, refer to ⇒ General Information; Body Repairs, Body Collision Repair ; General Information, Molded Foam Parts

Position of molded foam parts, refer to
⇒ “5 Molded Foam Parts”, page 7 .

9.3.4 Welding

Note

- *New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.*
- *Screw holes must remain free of adhesive in hinge reinforcement area.*



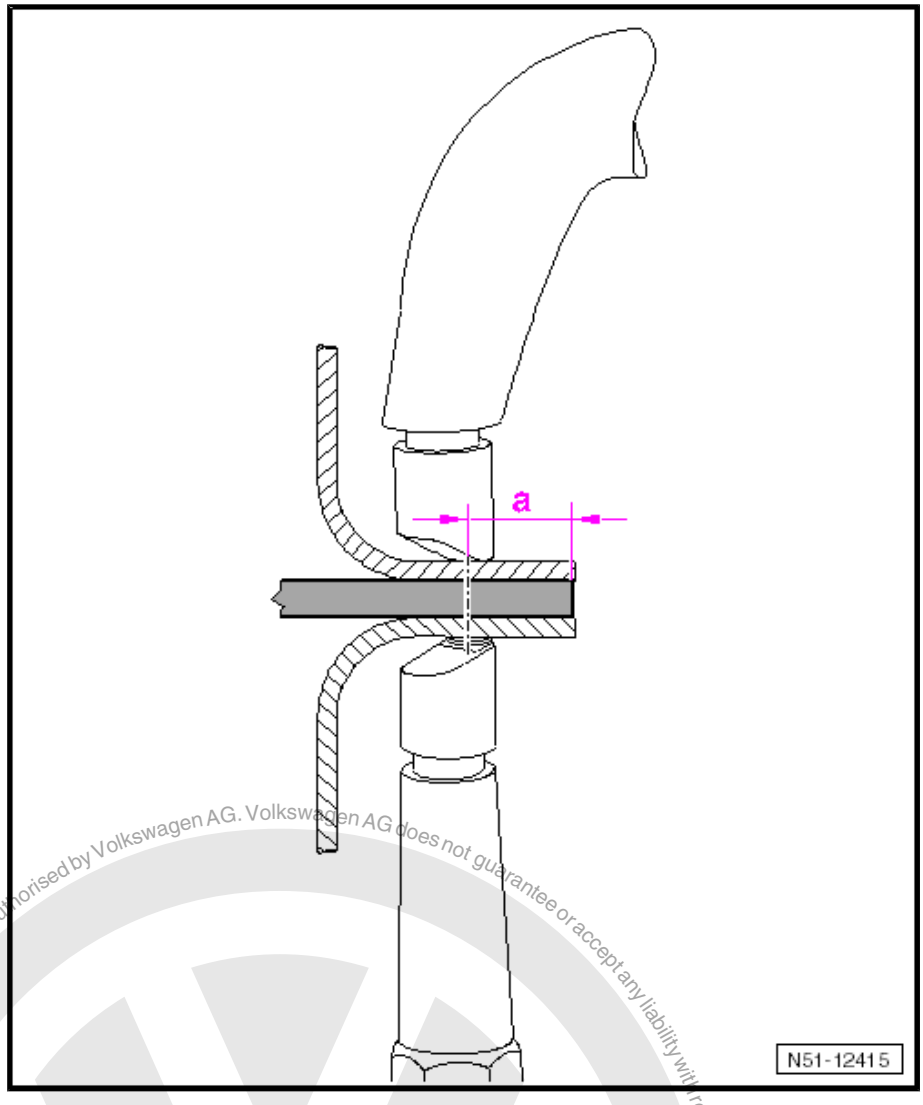
– Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.

Molded foam part -1-

Note

- *High-strength/highest strength hot formed is used on the A-, B- and C-pillars. The welding flanges in these areas are approximately 13 mm wide.*
- *If the weld points are placed on the edge of the hot-formed steel panels, the high temperatures will change the structure of the steel and this will negatively affect the crash worthiness.*

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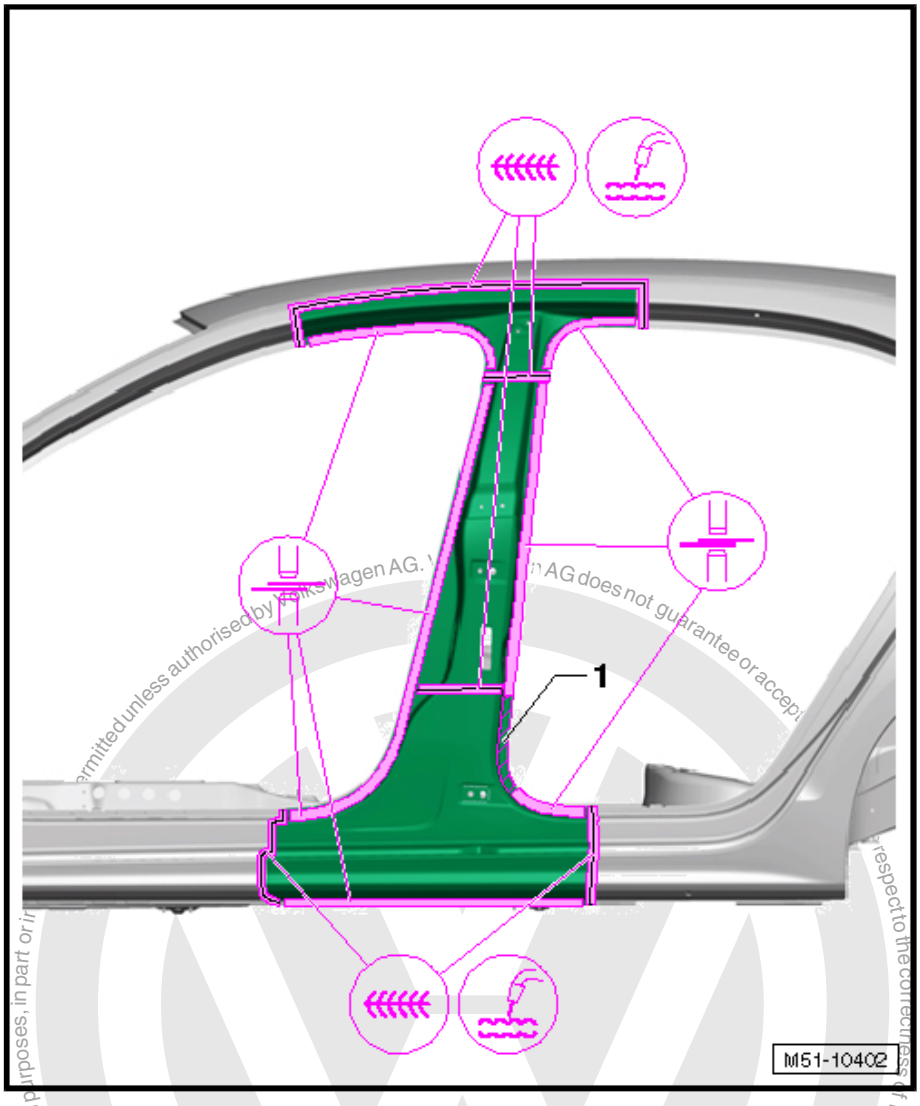
The weld points must be made as far as possible to the inside.

- Dimension -a- (8 mm) can be reached with beveled weld caps.

– Fit the new part to vehicle standing on its wheels or on an Alignment Bracket Set and secure.

– Check fit with attachments.

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Note

Pay attention to area -1- in which welding must not be performed.

– Weld the separation cuts, either MIG-L stitch weld seam or a gas-shielded arc continuous weld seam
– Weld the door openings and the sill panel with a straight-line spot weld seam.

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10 B-Pillar Reinforcement, Replacing, Non-Hybrid Vehicles

Front Sill Panel Reinforcement (Partial Section) and Rear Sill Panel Reinforcement (Partial Section)

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- B-pillar already removed, refer to ⇒ “9 B-Pillar, Replacing”, page 175 .
- Roof pillar partial section already removed, refer to ⇒ “3 Roof Pillar, Removing and Installing”, page 138 .

1 - B-Pillar Reinforcement

2 - Adhesive Areas

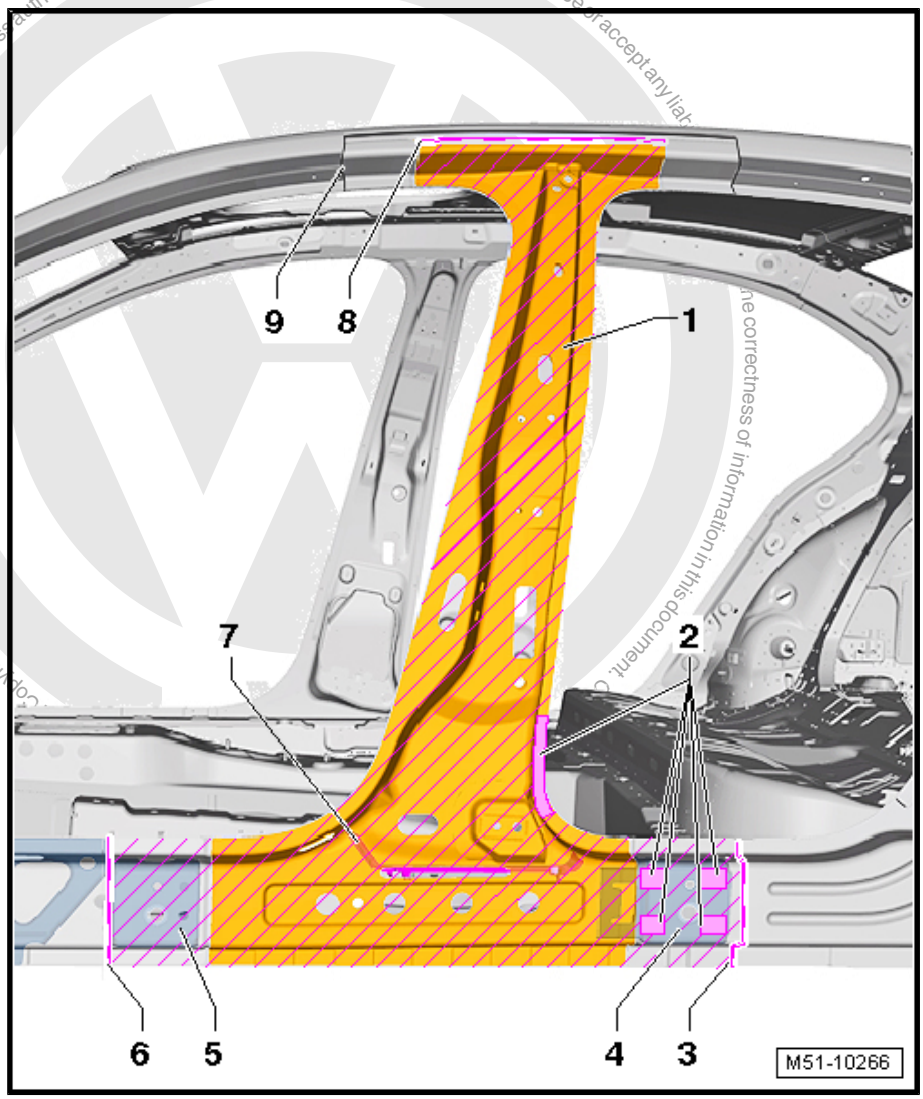
3 - Rear Sill Panel Reinforcement Separating Cut

4 - Partial Section, Rear Sill Panel Reinforcement with End Plate

Is also removed.

5 - Partial Section, Front Sill Panel Reinforcement with End Plate

Is also removed.



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6 - Front Sill Panel Reinforcement Separating Cut

7 - Molded Foam Part

8 - Upper B-Pillar Separating Cut

9 - Separated Area Inside the Roof Pillar

10.1 Tools

Note

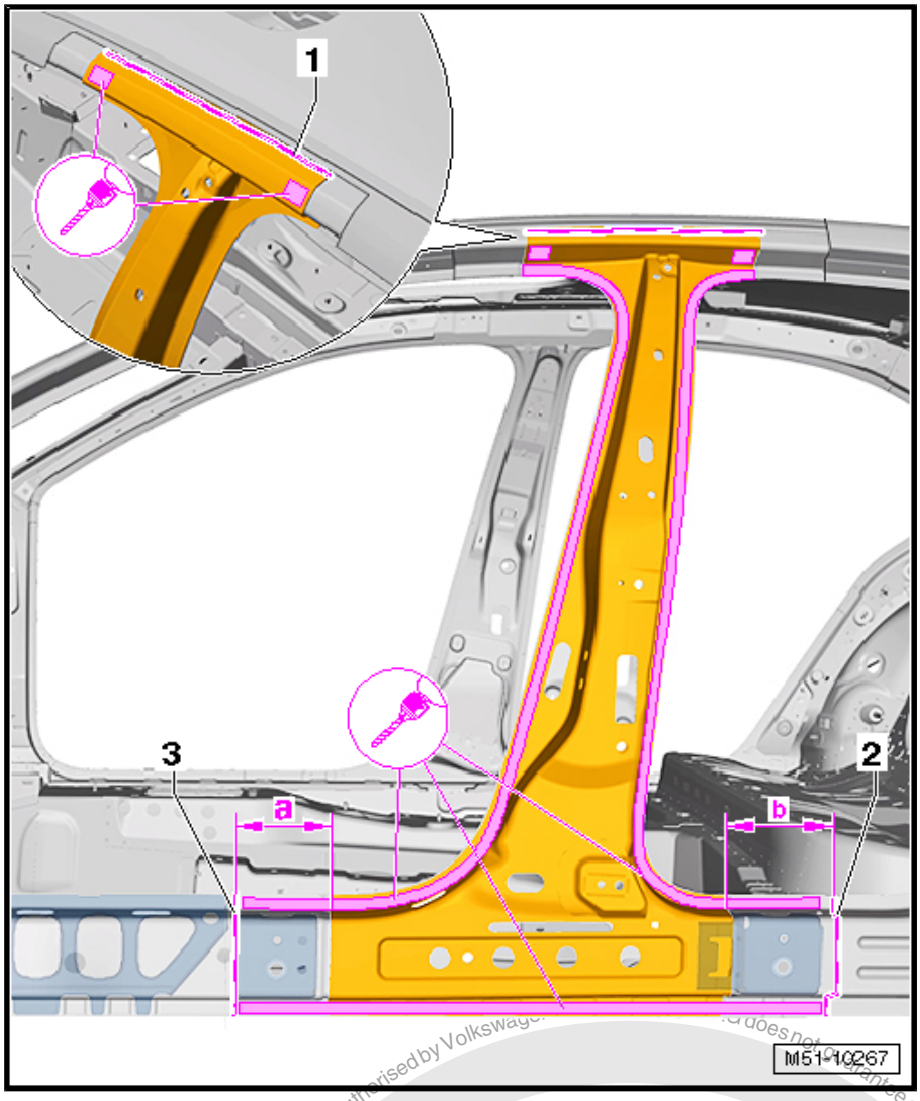
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

10.2 Removing

Note

- *Install the Mechanical Door Brace - VAG1438- before separating the B-pillar reinforcement. This will prevent the roof from changing its position.*
- *B-pillar reinforcement may only be separated in indicated locations.*
- *For reasons of safety »crash safety«, it is not permitted to separate and weld at a points other than the ones indicated.*
- *The roof pillar reinforcement must not be damaged. For »crash safety« is it not permitted to weld the roof pillar reinforcement again.*
- *Be careful not to damage the panel behind it when making the separation cuts.*

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– Perform the separation cut -1- on the roof pillar as shown.
– Perform the separation cut -2- on the rear sill panel reinforcement according to dimension -b-.

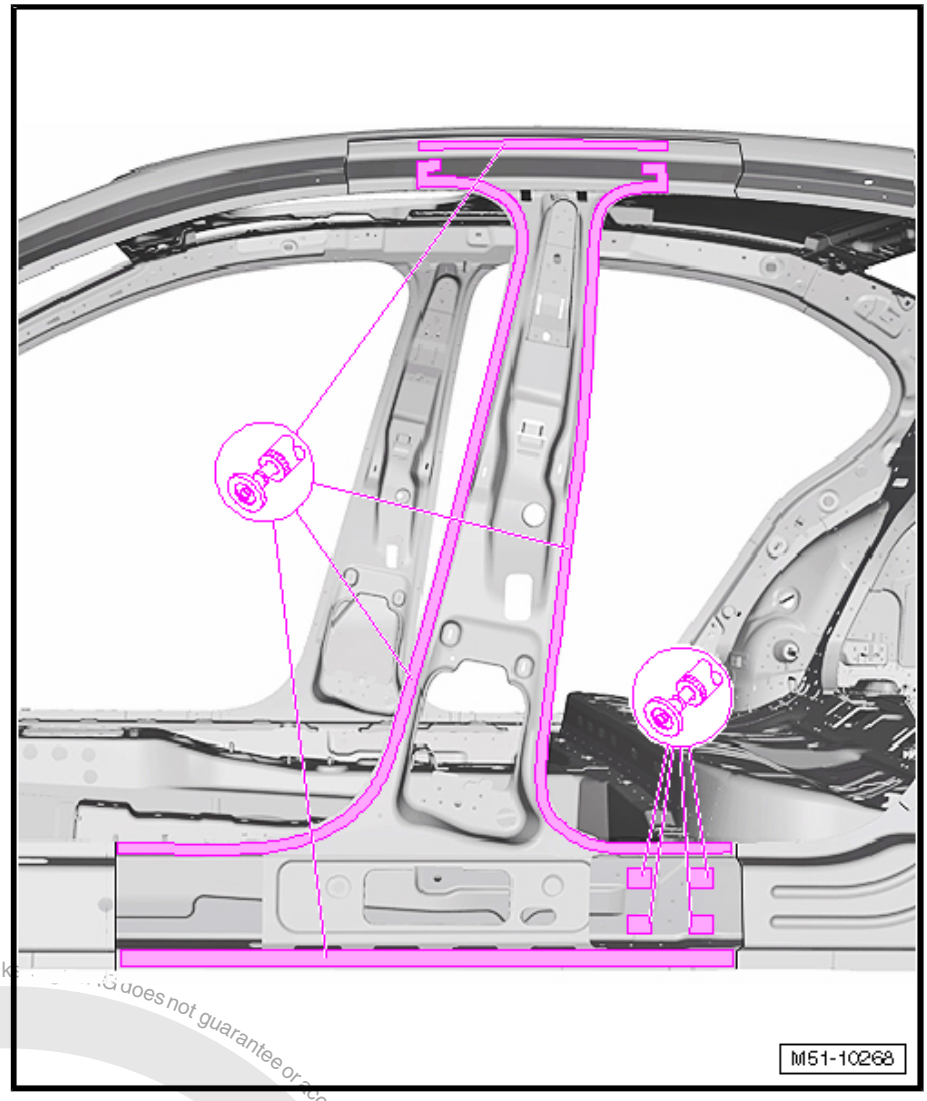
Dimension -b- = 150 mm

– Perform the separation cut -3- on the front sill panel reinforcement according to dimension -a-.

Dimension -a- = 140 mm

– Separate the original joint.

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– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

10.3 Installing

Note

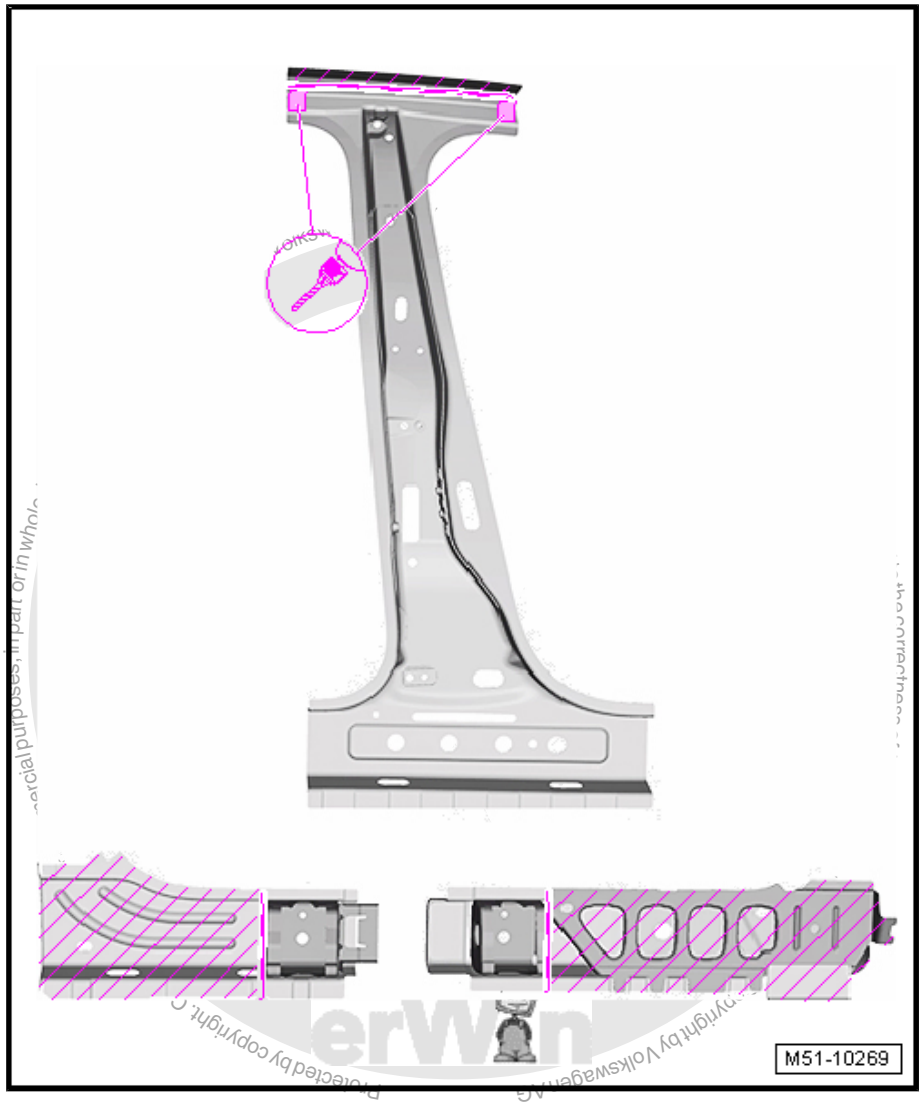
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "9.1 Tools", page 176 .

10.3.1 Preparing New Parts

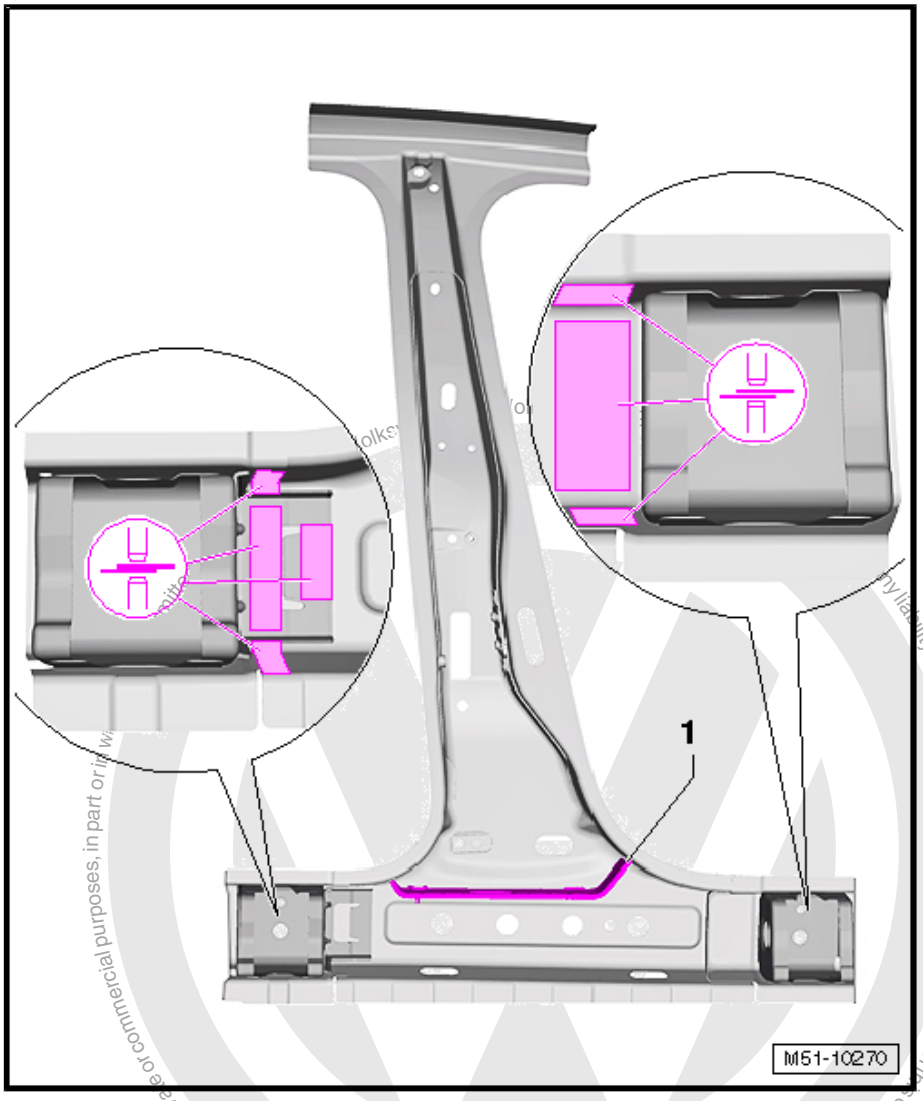
New Part

- B-Pillar Reinforcement
- Rear sill panel reinforcement (with end plate)
- Front sill panel reinforcement (with end plate)
- Molded Foam Part
- 2K Body Adhesive - D 180 KD3 A2-

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– Transfer separating cuts onto new part and cut to shape.
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.
– Make sure the new parts fits on the vehicle.



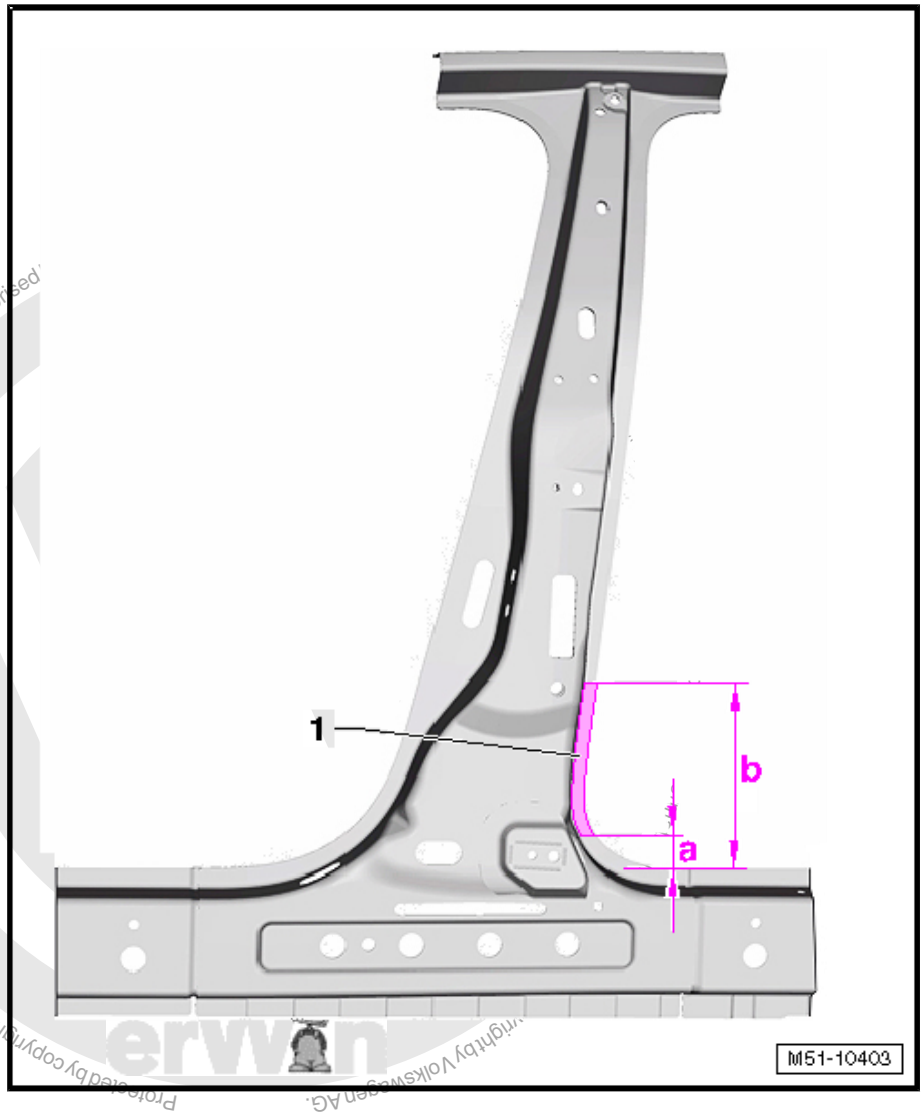
– Weld the new parts as in the original joint with a straight-line spot weld seam.
– Insert the new molded foam part -1-, refer to ⇒ “5 Molded Foam Parts”, page 7 .

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10.3.2 Marking of Areas in Which Welding Must Not Be Performed

Note

- *For »crash safety« reasons, do not weld in the marked areas -1- when welding the B-pillar reinforcement.*
- *It is important to maintain the indicated dimensions.*



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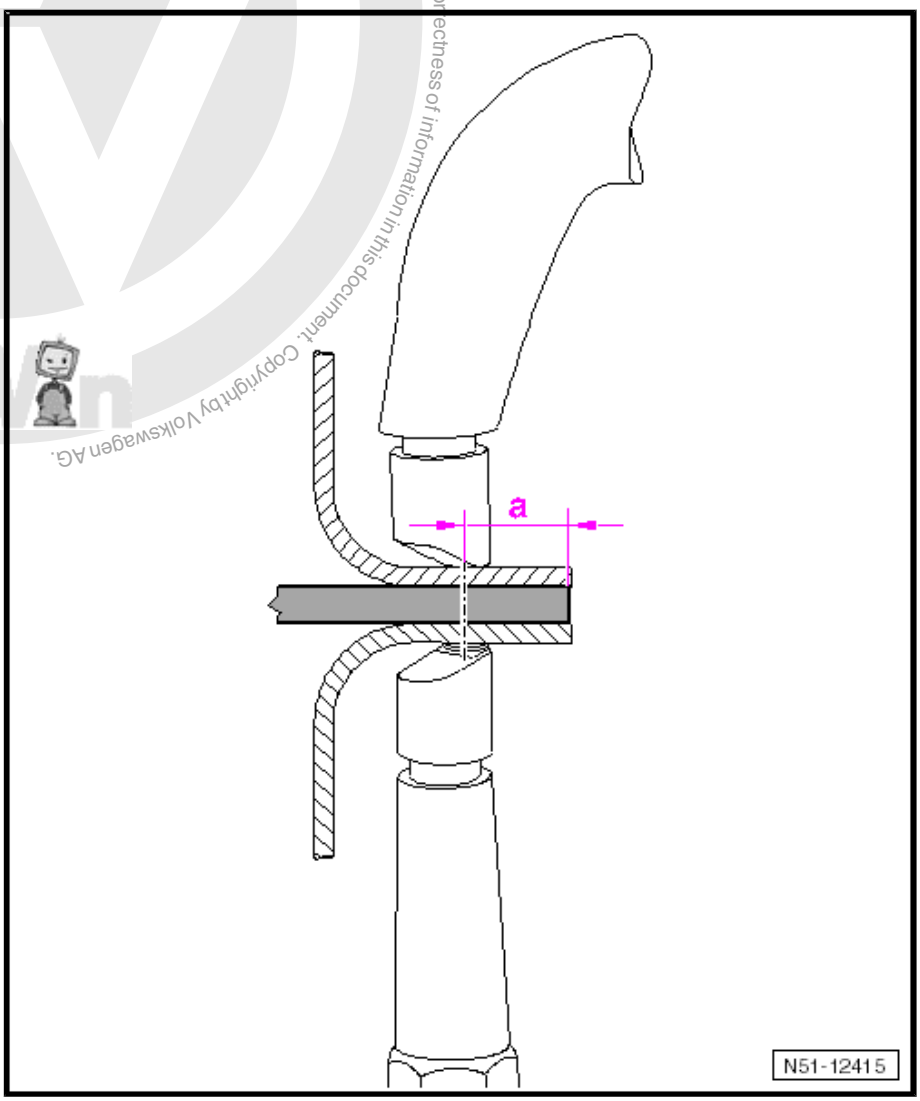
– Mark the area -1- on the B-pillar reinforcement where welding is not permitted.

- Dimension -a- = 40 mm
- Dimension -b- = 240 mm

10.3.3 Welding

Note

- *High-strength/highest strength hot formed is used on the A-, B- and C-pillars. The welding flanges in these areas are approximately 13 mm wide.*
- *If the weld points are placed on the edge of the hot-formed steel panels, the high temperatures will change the structure of the steel and this will negatively affect the crash worthiness.*



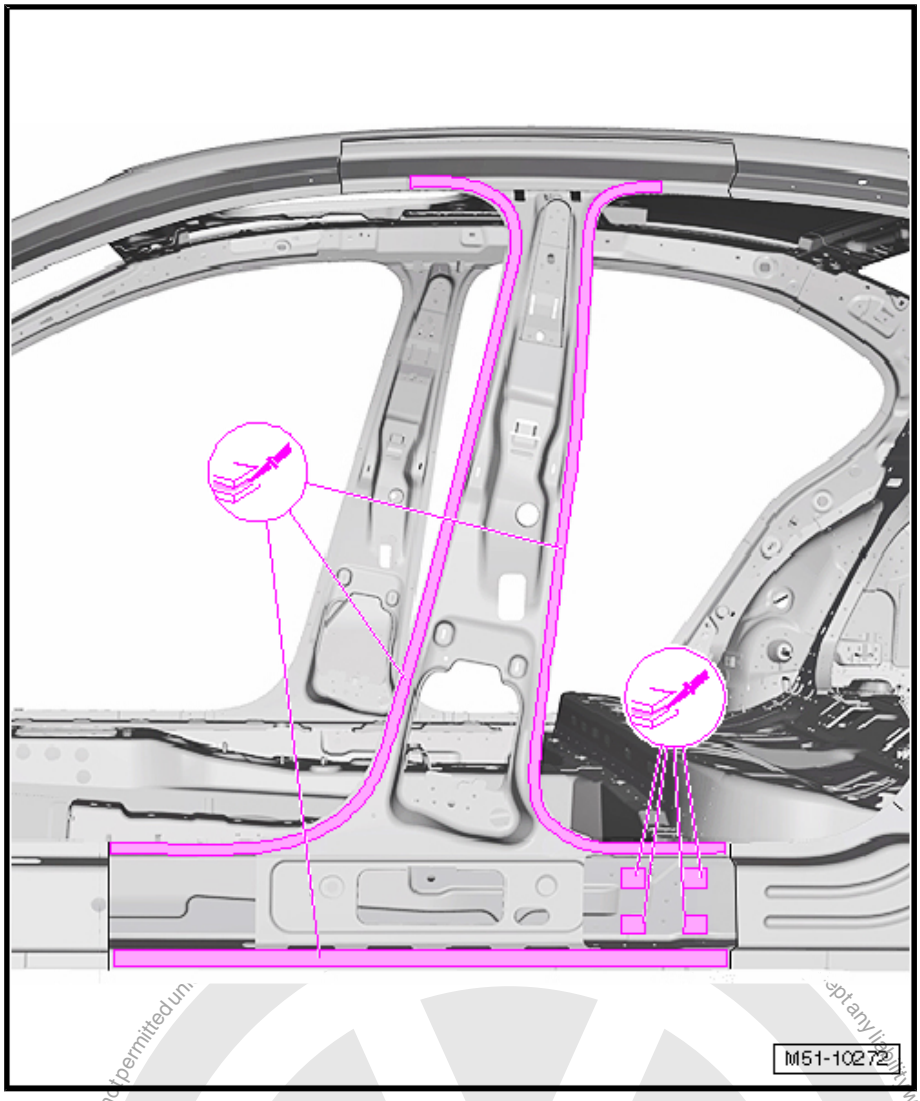
The weld points must be made as far as possible to the inside.

- Dimension -a- (8 mm) can be reached with beveled weld caps.

Note

New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

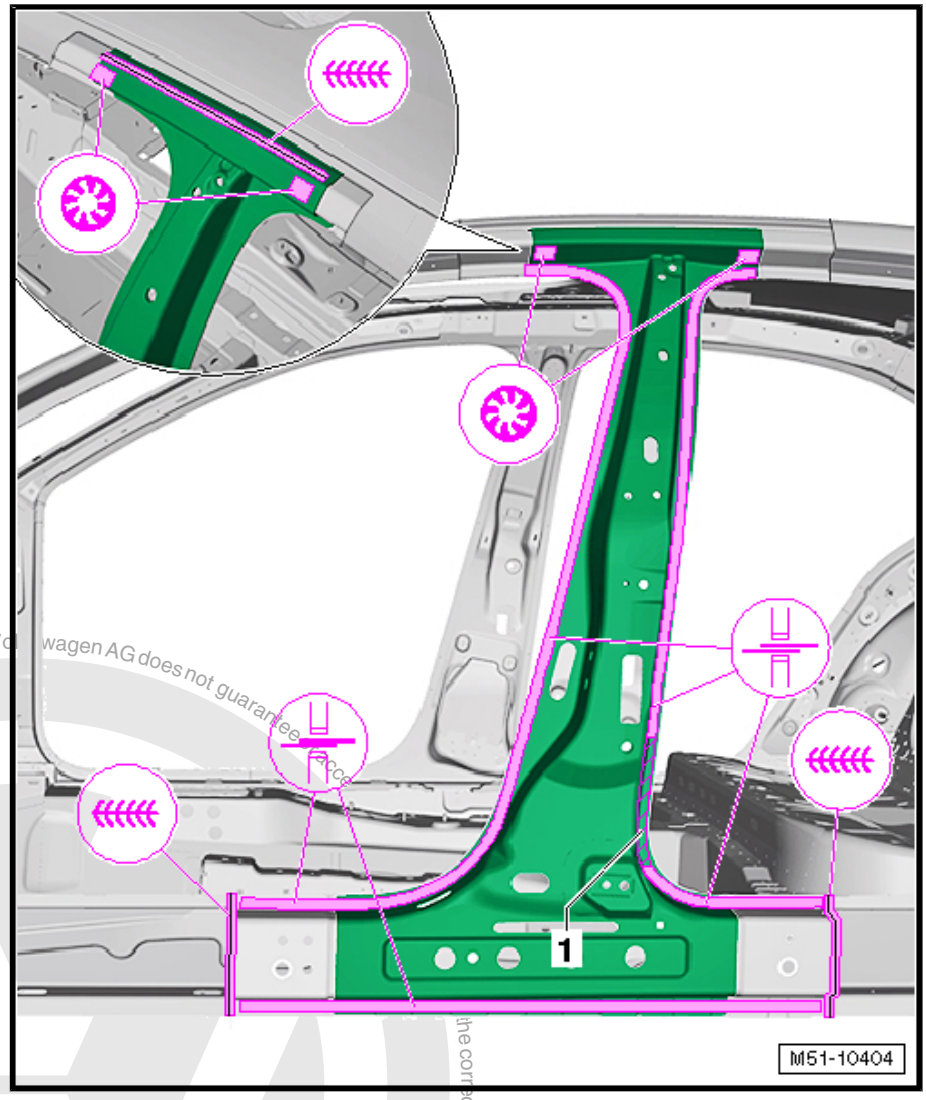
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Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.

– Fit new parts to vehicle standing on alignment bracket set and secure.
– Check fit with attachments.

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Note

Pay attention to areas -1- in which welding must not be performed.

- Weld in B-pillar reinforcement, straight-line spot weld seam - inverter.
- Weld the separation cuts on the front and rear sill panel reinforcements with a gas-shielded arc continuous weld seam.
- Weld the separating cut on the upper B-pillar reinforcement, Gas-shielded arc continuous weld seam.
- Weld in the upper B-pillar reinforcement, Gas-shielded arc plug weld seam.
- Install the B-pillar, refer to ⇒ “9.3 Installing”, page 178 .

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11 B-Pillar Reinforcement, Replacing, Hybrid Vehicles

Front Sill Panel Reinforcement (Partial Section) and Rear Sill Panel Reinforcement (Partial Section)

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- B-pillar already removed, refer to ⇒ “9 B-Pillar, Replacing”, page 175 .
- Roof pillar partial section already removed, refer to ⇒ “3 Roof Pillar, Removing and Installing”, page 138 .

1 - B-Pillar Reinforcement

2 - Adhesive Areas

3 - Rear Sill Panel Reinforcement Separating Cut

4 - Partial Section, Rear Sill Panel Reinforcement with End Plate

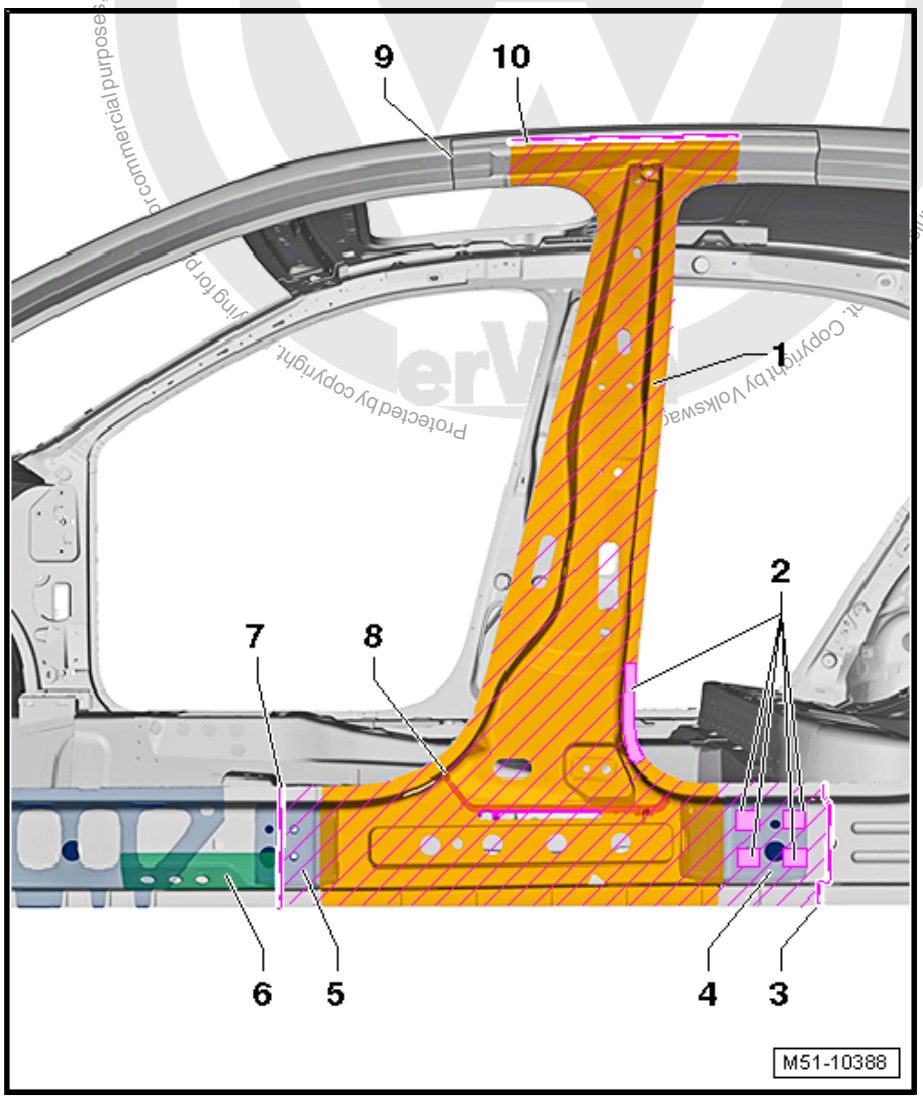
Is also removed.

5 - Partial Section, Front Sill Panel Reinforcement with End Plate

Is also removed.

6 - Double Brace

Is also not removed.



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7 - Front Sill Panel Reinforcement Separating Cut

8 - Molded Foam Part

9 - Separated Area Inside the Roof Pillar

10 - Upper B-Pillar Separating Cut

11.1 Tools

Note

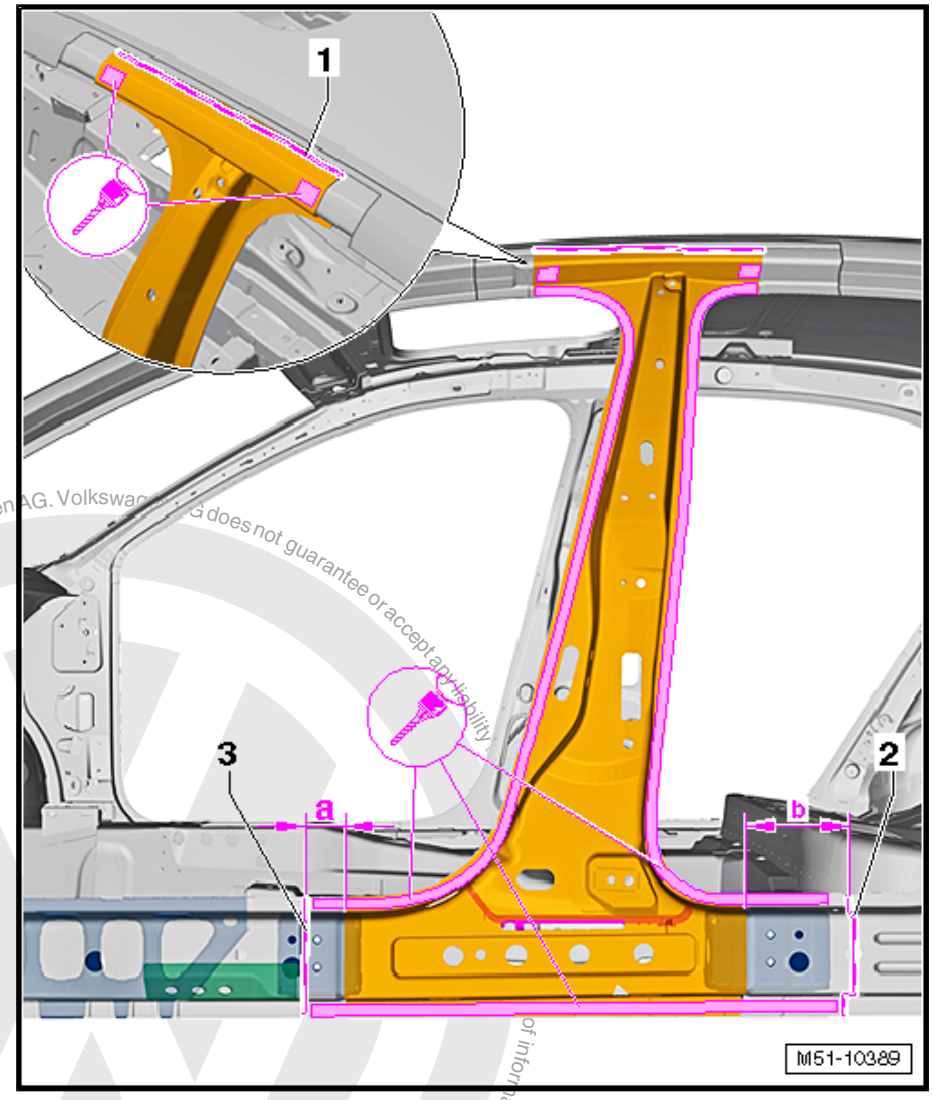
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

11.2 Removing

Note

- *Install the Mechanical Door Brace - VAG1438- before separating the B-pillar reinforcement. This will prevent the roof from changing its position.*
- *B-pillar reinforcement may only be separated in indicated locations.*
- *For reasons of safety »crash safety«, it is not permitted to separate and weld at a points other than the ones indicated.*
- *The roof pillar reinforcement must not be damaged. For »crash safety« is it not permitted to weld the roof pillar reinforcement again.*
- *Be careful not to damage the panel behind it when making the separation cuts.*
- *The front end plate may also get cut when making the separation cut -3-. Then it is necessary to remove the end plate completely and replace it.*

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– Perform the separation cut -1- on the roof pillar as shown.
– Perform the separation cut -2- on the rear sill panel reinforcement according to dimension -b-.

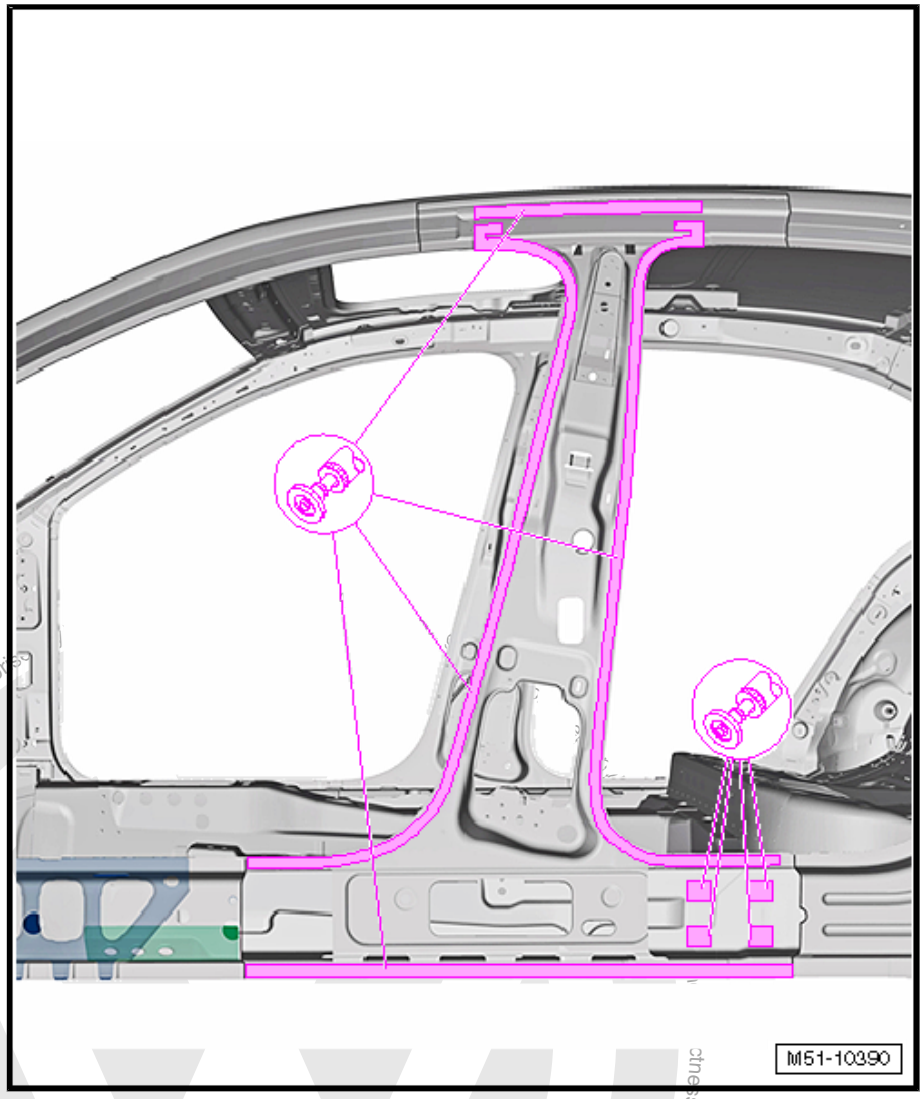
Dimension -b- = 150 mm

– Perform the separation cut -3- on the front sill panel reinforcement according to dimension -a-.

Dimension -a- = 60 mm

– Separate the original joint.

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– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

11.3 Installing

Note

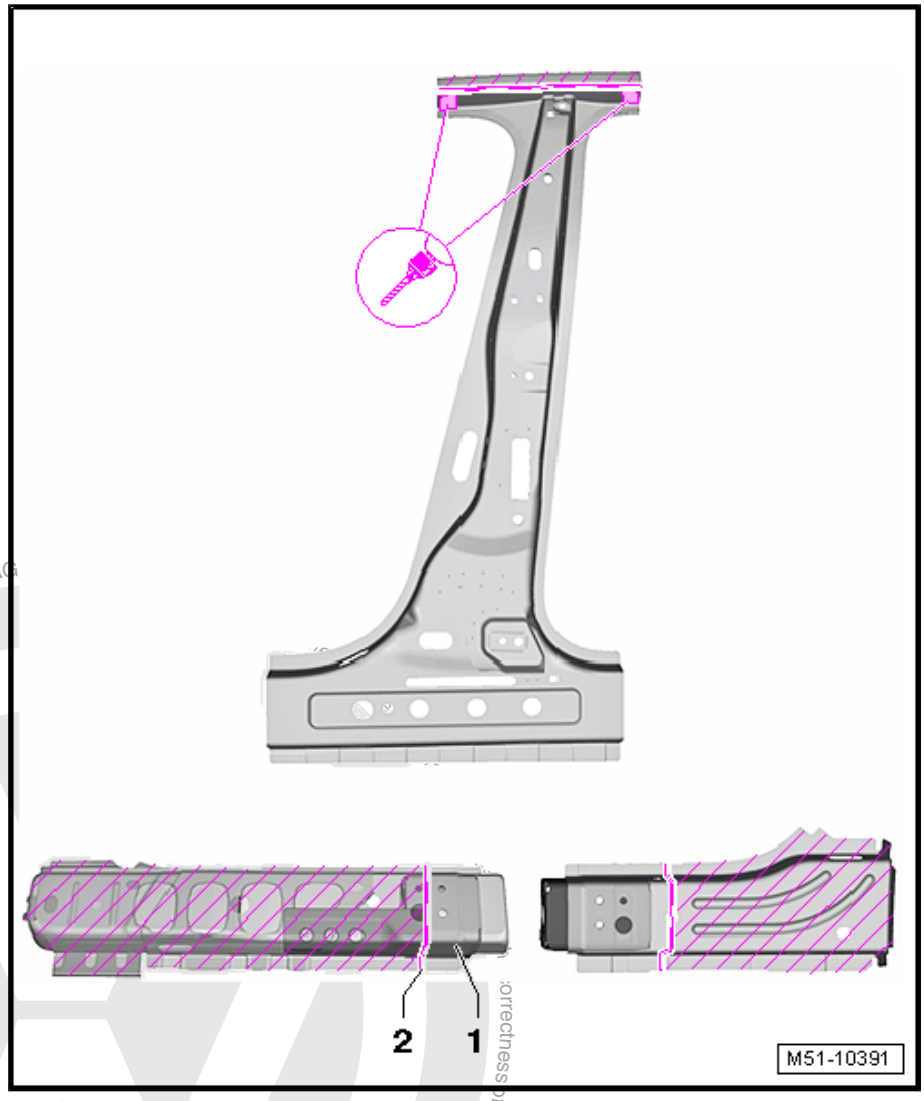
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "11.1 Tools", page 195 .

11.3.1 Preparing New Parts

New Part

- B-Pillar Reinforcement
- Rear sill panel reinforcement (with end plate)
- Front sill panel reinforcement (with end plate)
- Molded Foam Part
- 2K Body Adhesive - D 180 KD3 A2-

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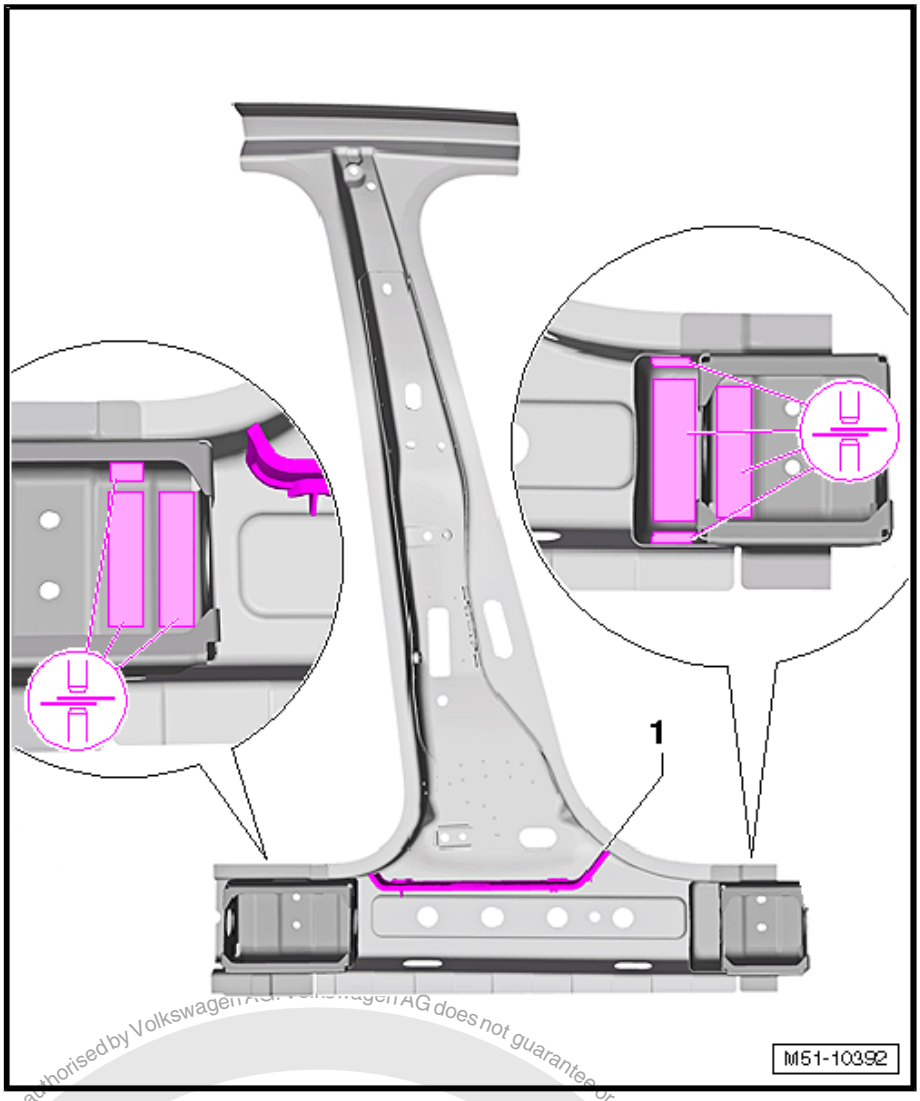
- Transfer separating cuts onto new part and cut to shape.

Note

Be careful not to damage the end plate -1- underneath when making the separation cut -2-.

- Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.
- Make sure the new parts fits on the vehicle.

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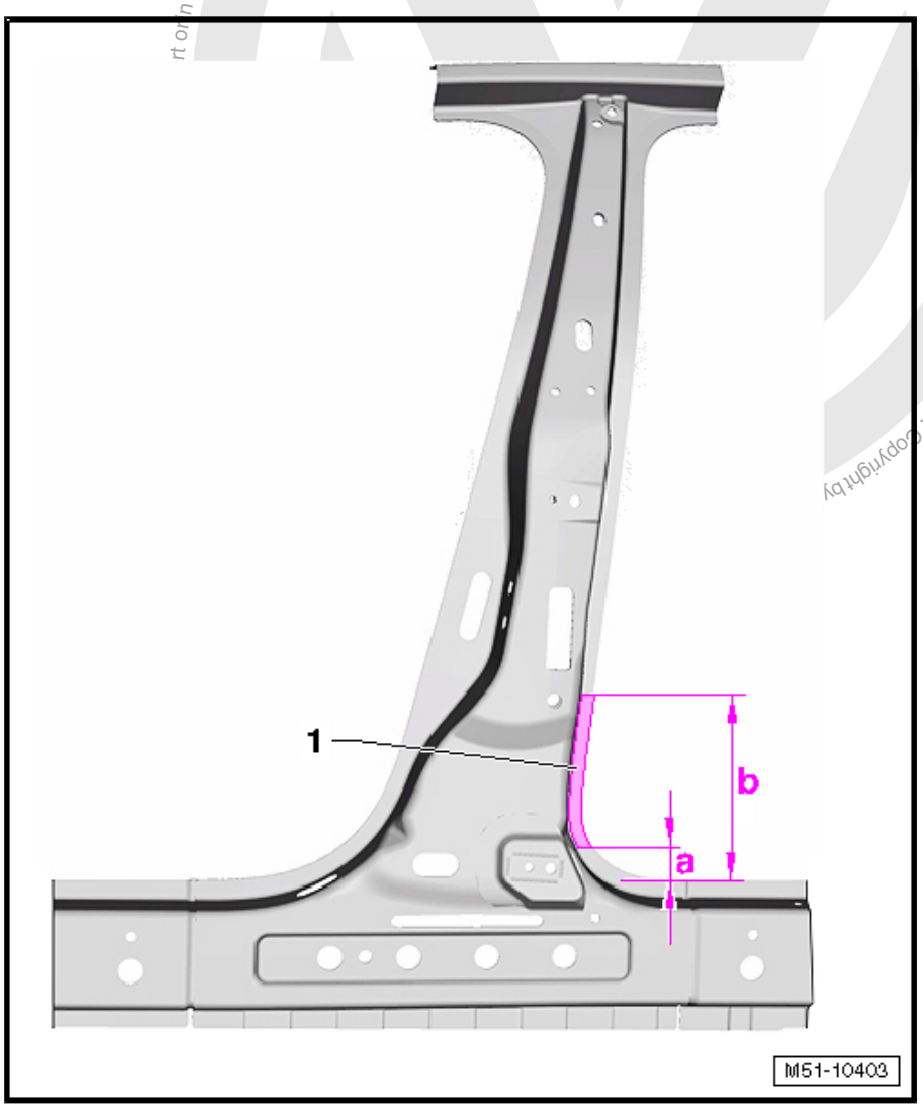
– Weld the new parts as in the original joint with a straight-line spot weld seam.
– Insert the new molded foam part -1-, refer to ⇒ “5 Molded Foam Parts”, page 7 .

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11.3.2 Marking of Areas in Which Welding Must Not Be Performed

Note

- *For »crash safety« reasons, do not weld in the marked areas -1- when welding the B-pillar reinforcement.*
- *It is important to maintain the indicated dimensions.*



– Mark the area -1- on the B-pillar reinforcement where welding is not permitted.

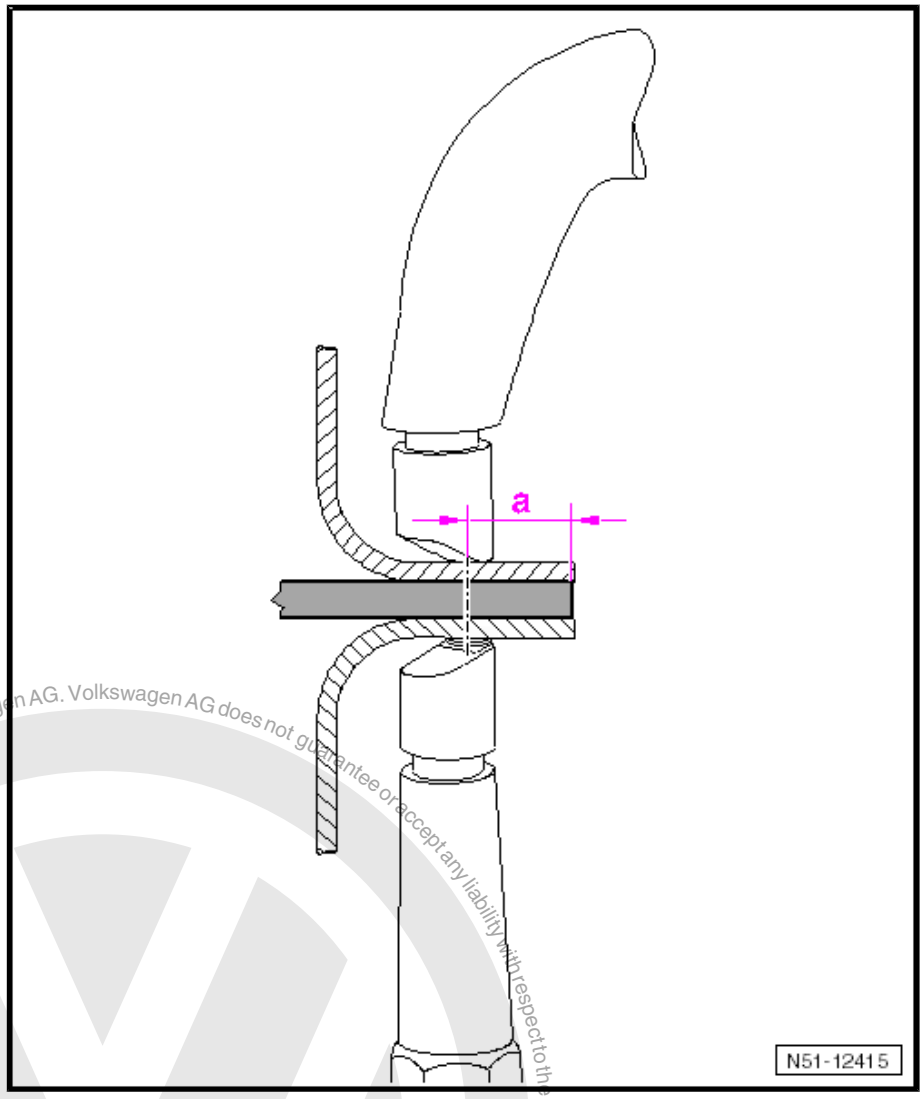
- Dimension -a- = 40 mm
- Dimension -b- = 240 mm

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11.3.3 Welding

Note

- *High-strength/highest strength hot formed is used on the A-, B- and C-pillars. The welding flanges in these areas are approximately 13 mm wide.*
- *If the weld points are placed on the edge of the hot-formed steel panels, the high temperatures will change the structure of the steel and this will negatively affect the crash worthiness.*



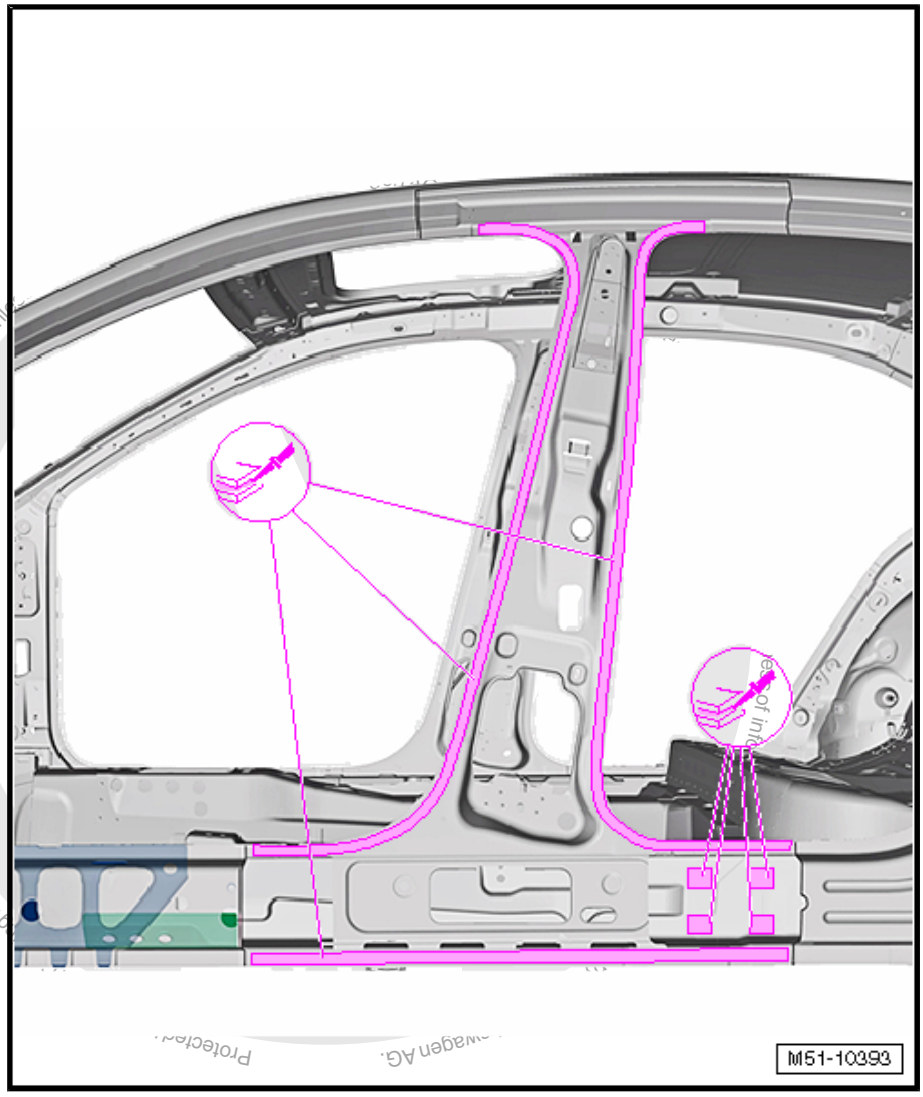
The weld points must be made as far as possible to the inside.

- Dimension -a- (8 mm) can be reached with beveled weld caps.

Note

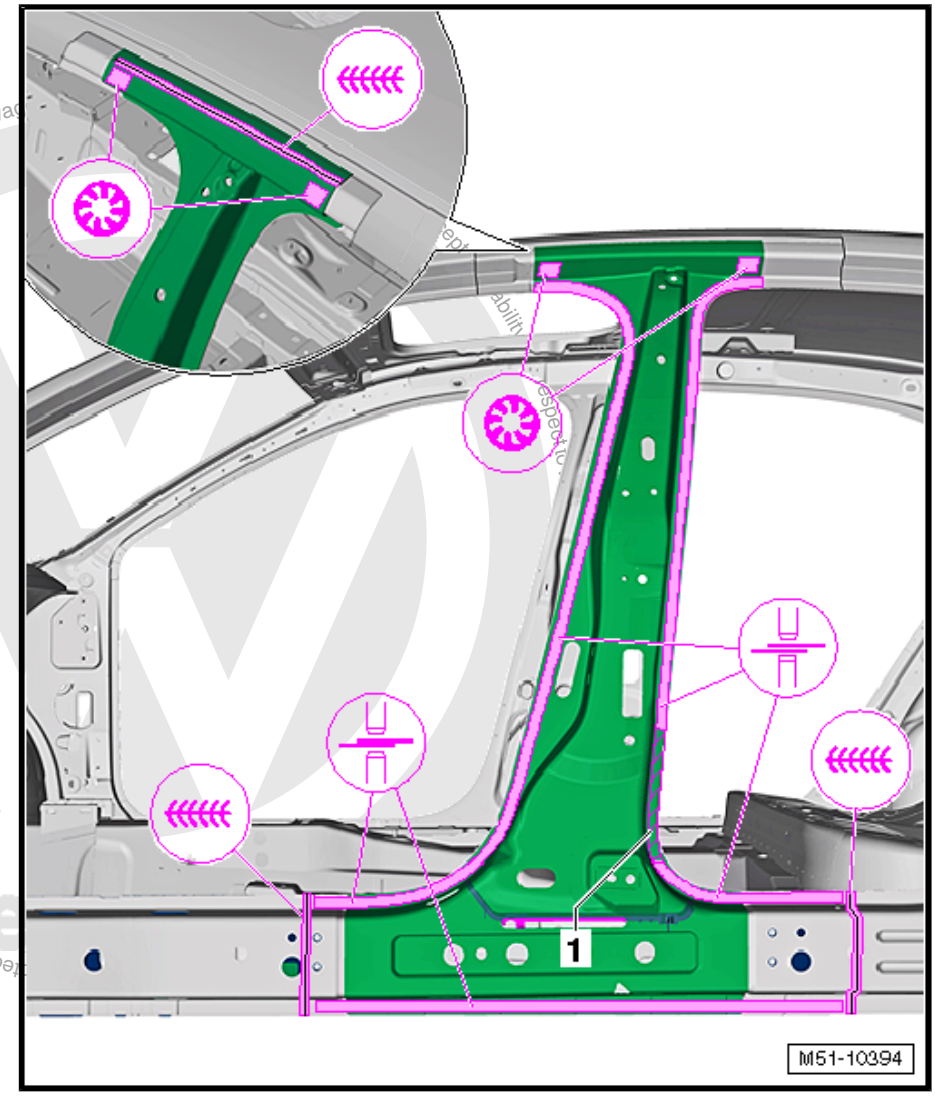
New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

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Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.

– Fit new parts to vehicle standing on Alignment Bracket Set and secure.
– Check fit with attachments.



Note

Pay attention to areas -1- in which welding must not be performed.

- Weld in B-pillar reinforcement, straight-line spot weld seam - inverter.
- Weld the separation cuts on the front and rear sill panel reinforcements with a gas-shielded arc continuous weld seam.
- Weld the separating cut on the upper B-pillar reinforcement, Gas-shielded arc continuous weld seam.
- Weld in the upper B-pillar reinforcement, Gas-shielded arc plug weld seam.
- Install the B-pillar, refer to ⇒ “9.3 Installing”, page 178 .

RO: 51 44 55 50

12 Inner B-Pillar, Removing and Installing

DANGER!

Follow all safety precautions.

If welding and cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

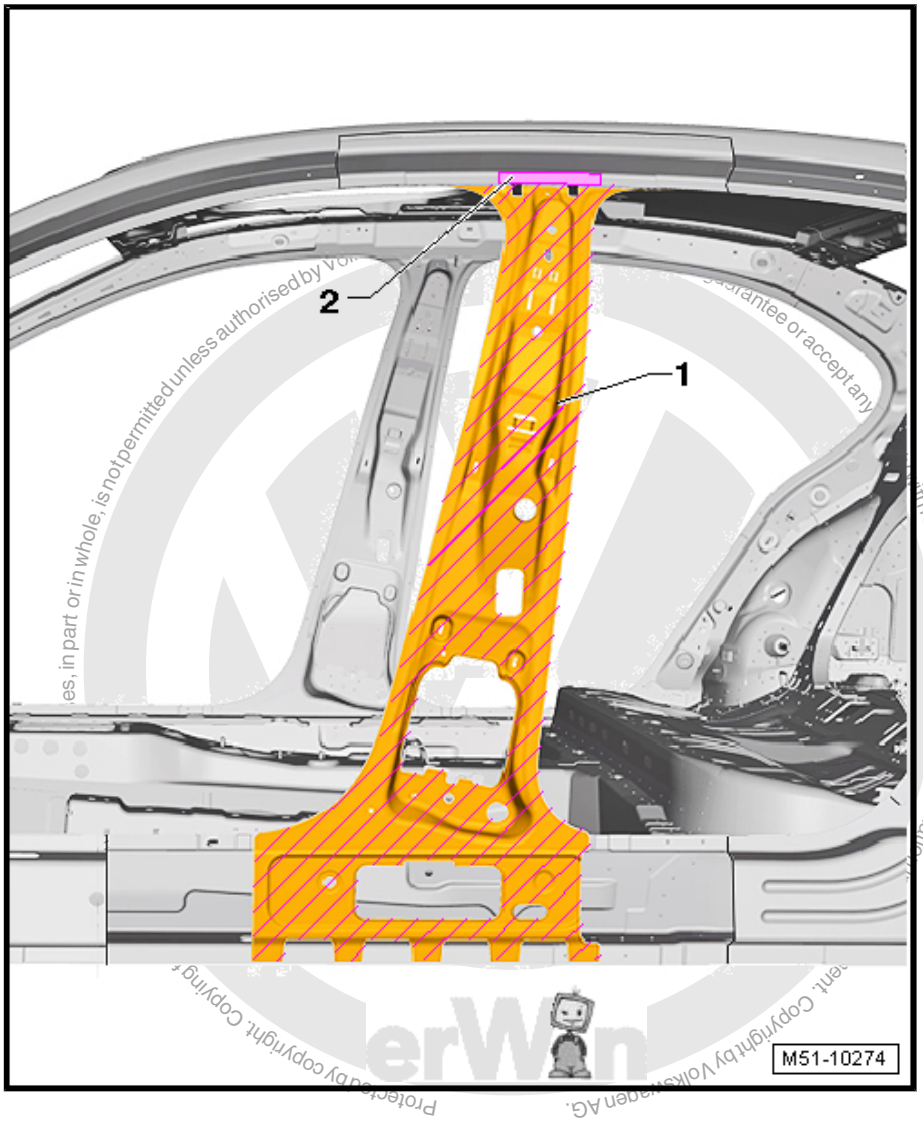
⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Non-hybrid vehicles: B-pillar reinforcement already removed, refer to ⇒ “10 B-Pillar Reinforcement, Replacing, Non-Hybrid Vehicles”, page 184 .
- Hybrid vehicles: B-pillar reinforcement already removed, refer to ⇒ “11 B-Pillar Reinforcement, Replacing, Hybrid Vehicles”, page 194 .

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1 - Inner B-pillar

2 - Bonded area

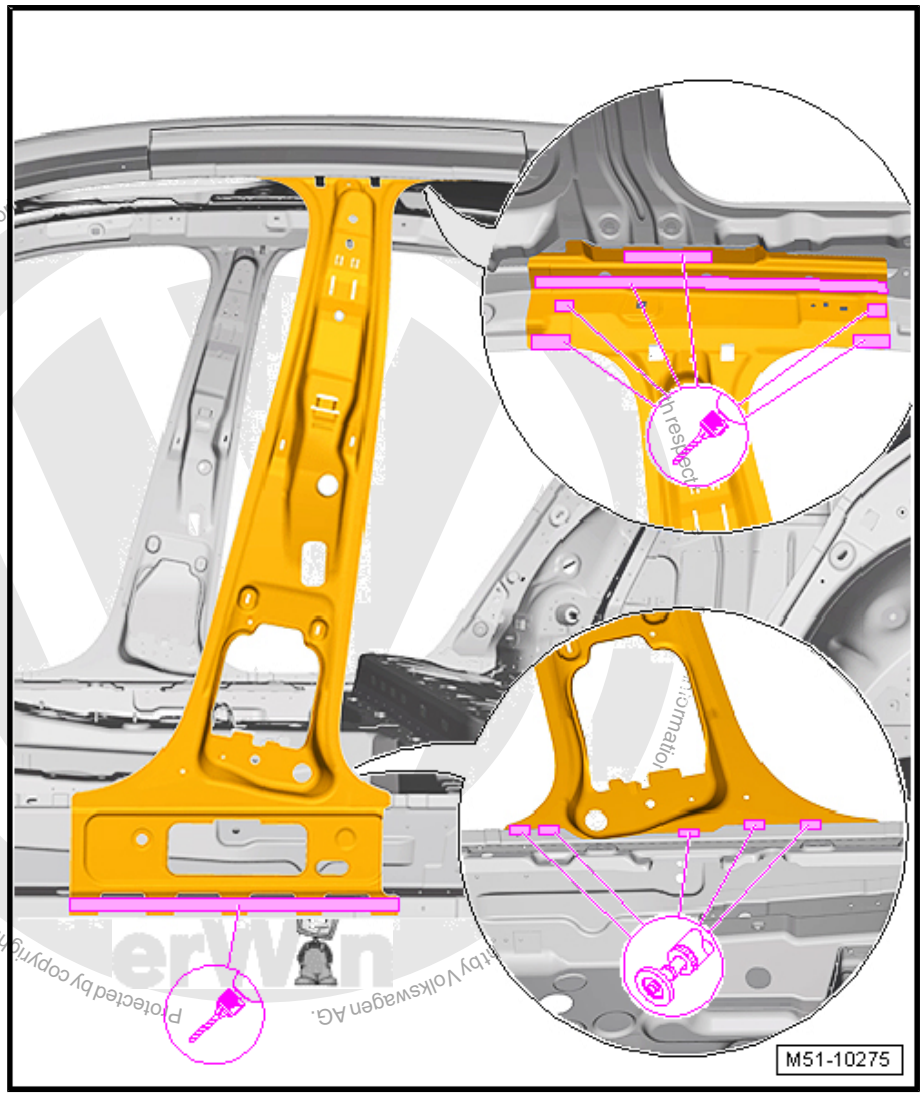


12.1 Tools

Note

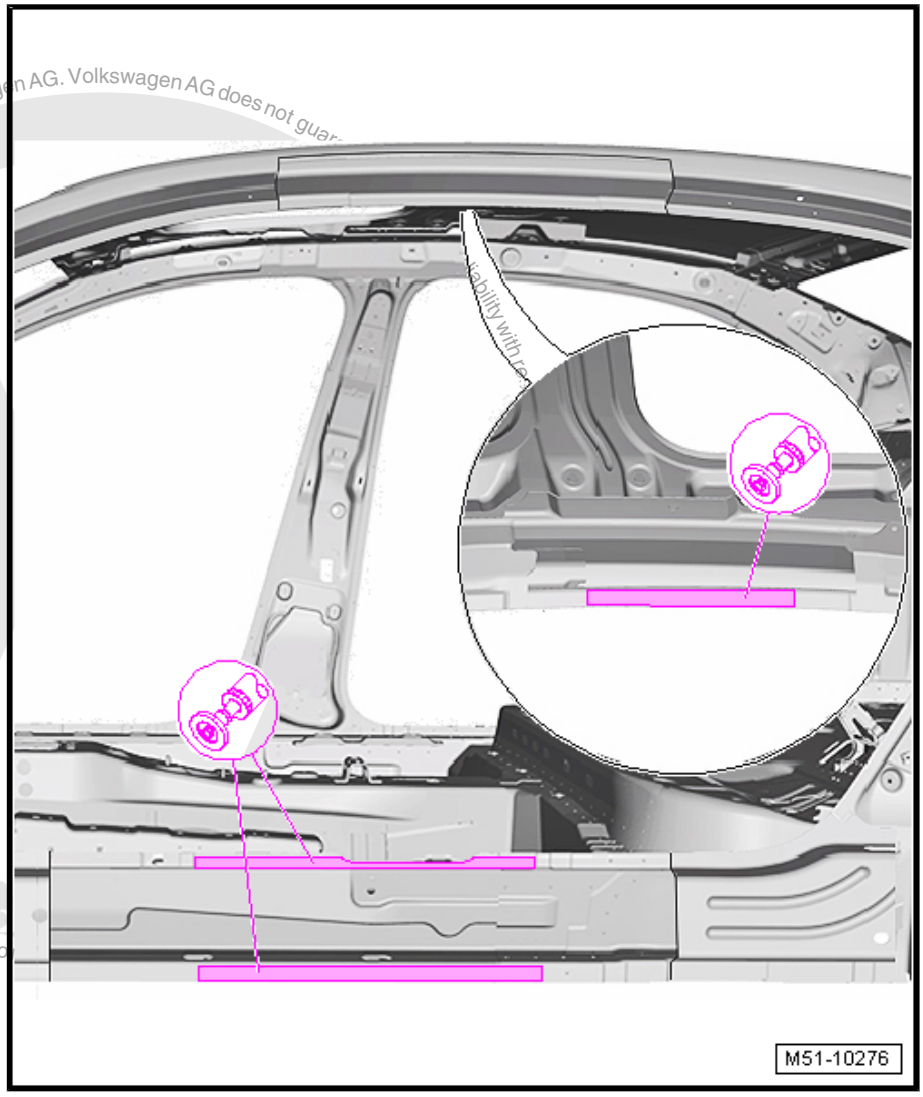
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

12.2 Removing



– Loosen the original joint for the roof pillar and for the sill panel.

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– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

12.3 Installing

Note

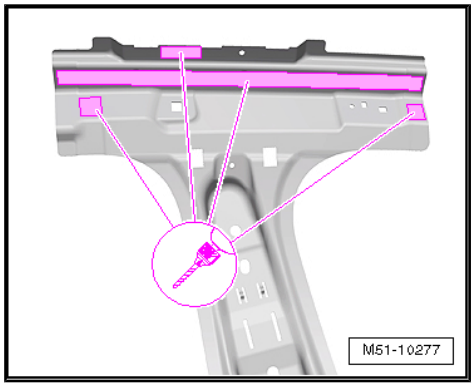
When using different types of steel and materials of different strengths, one of the special tools listed are required to perform repair work correctly, refer to ⇒ "12.1 Tools", page 205 .

12.3.1 Preparing New Parts

New Part

- Inner B-pillar
- 2K Body Adhesive - D 180 KD3 A2-

– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

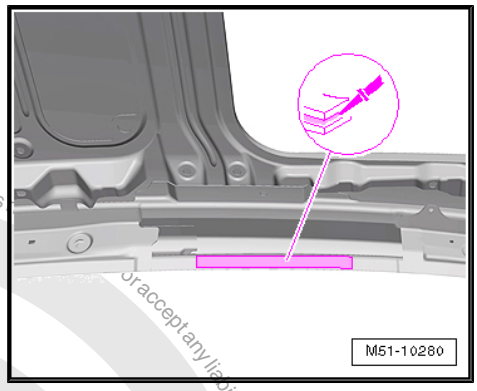


12.3.2 Welding

Note

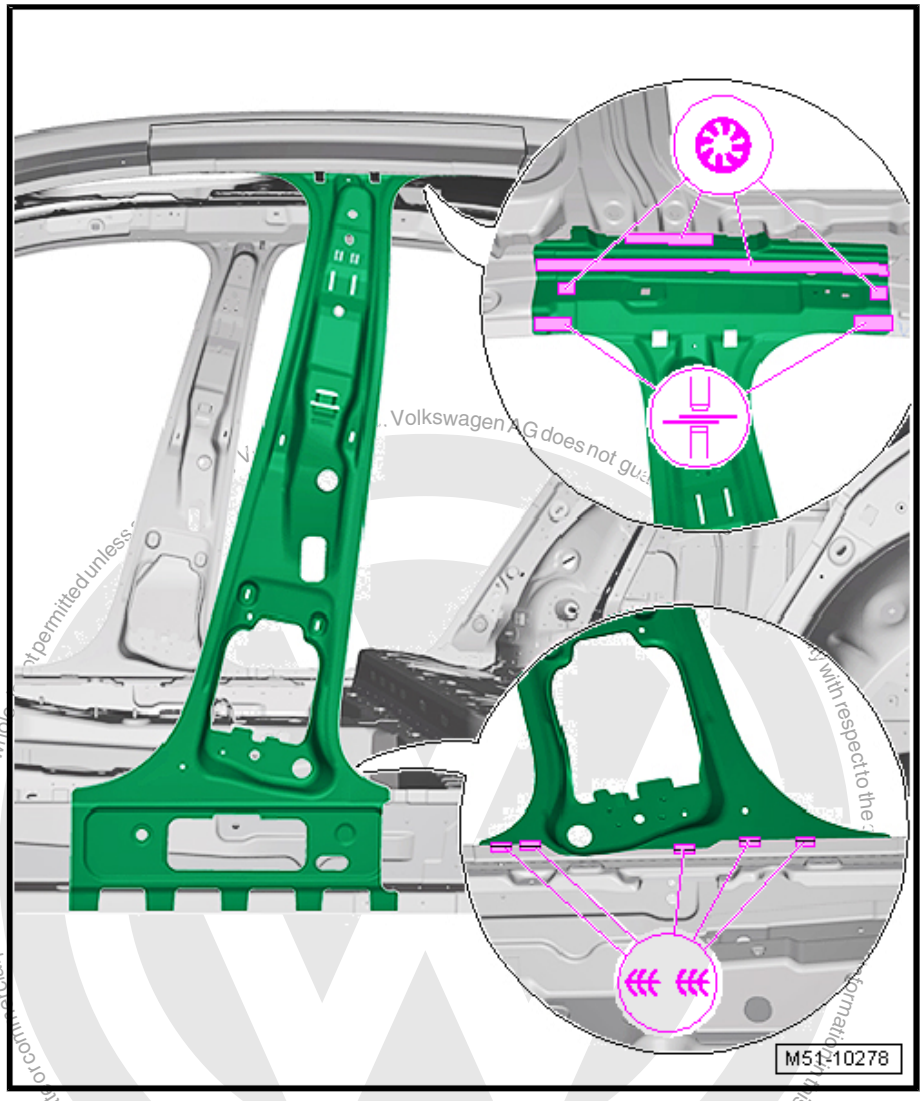
New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

– Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.



– Fit new part to vehicle standing on Alignment Bracket Set and secure.
– Check fit with attachments.

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– Weld the inner B-pillar with a gas-shielded arc plug weld seam and gas-shielded arc continuous weld seam (staggered).
– Non-hybrid vehicles: install the B-pillar reinforcement, refer to ⇒ “10.3 Installing”, page 187 .
– Hybrid vehicles: install the B-pillar reinforcement, refer to ⇒ “11.3 Installing”, page 197 .

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RO: 51 45 55 00

13 Sill Panel, Removing and Installing

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Separating Cuts

2 - Molded Foam Parts

Note

Foam residue must be removed as much as possible before sanding work.

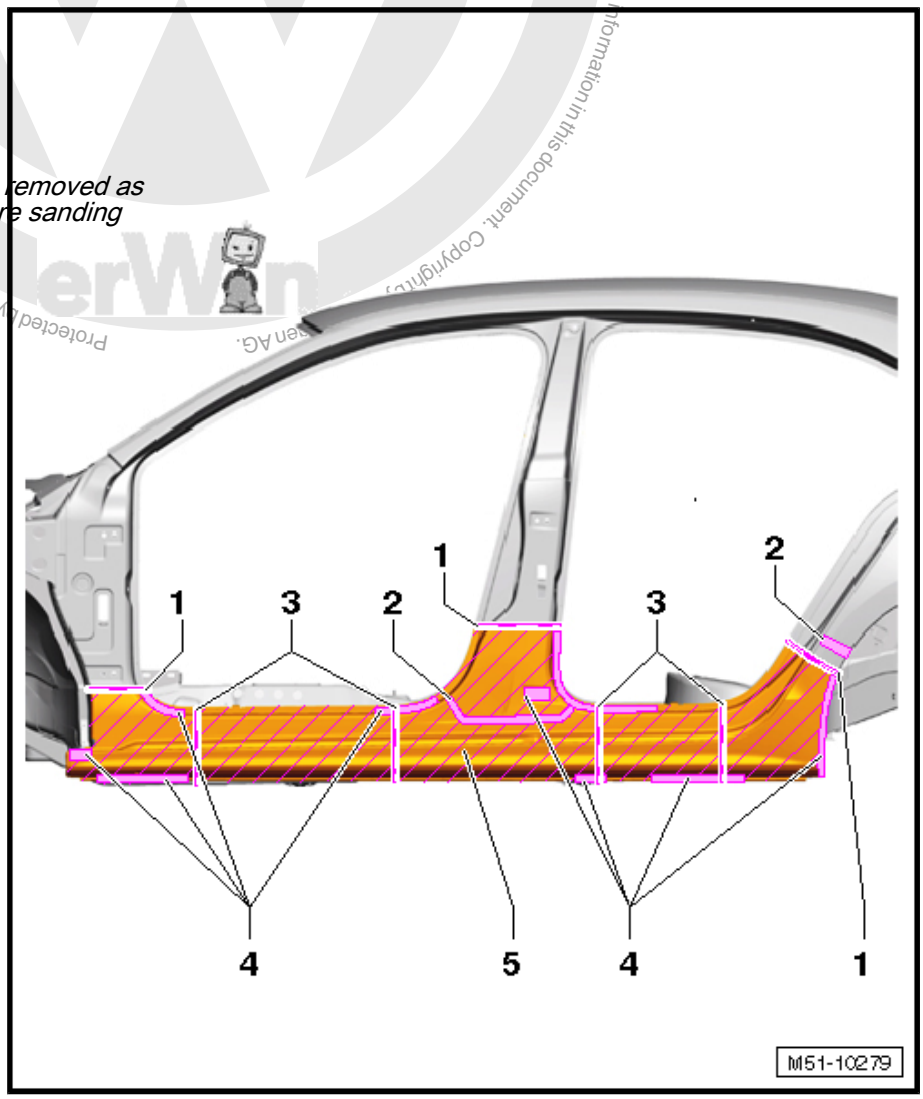
3 - Separating Cut

Partial renewal
A partial replacement on the sill panel is possible with these separating cuts.

Pay close attention to the replacement part separation cut for the sub-part when performing a partial replacement.

4 - Adhesive Areas

5 - Sill Panel



13.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

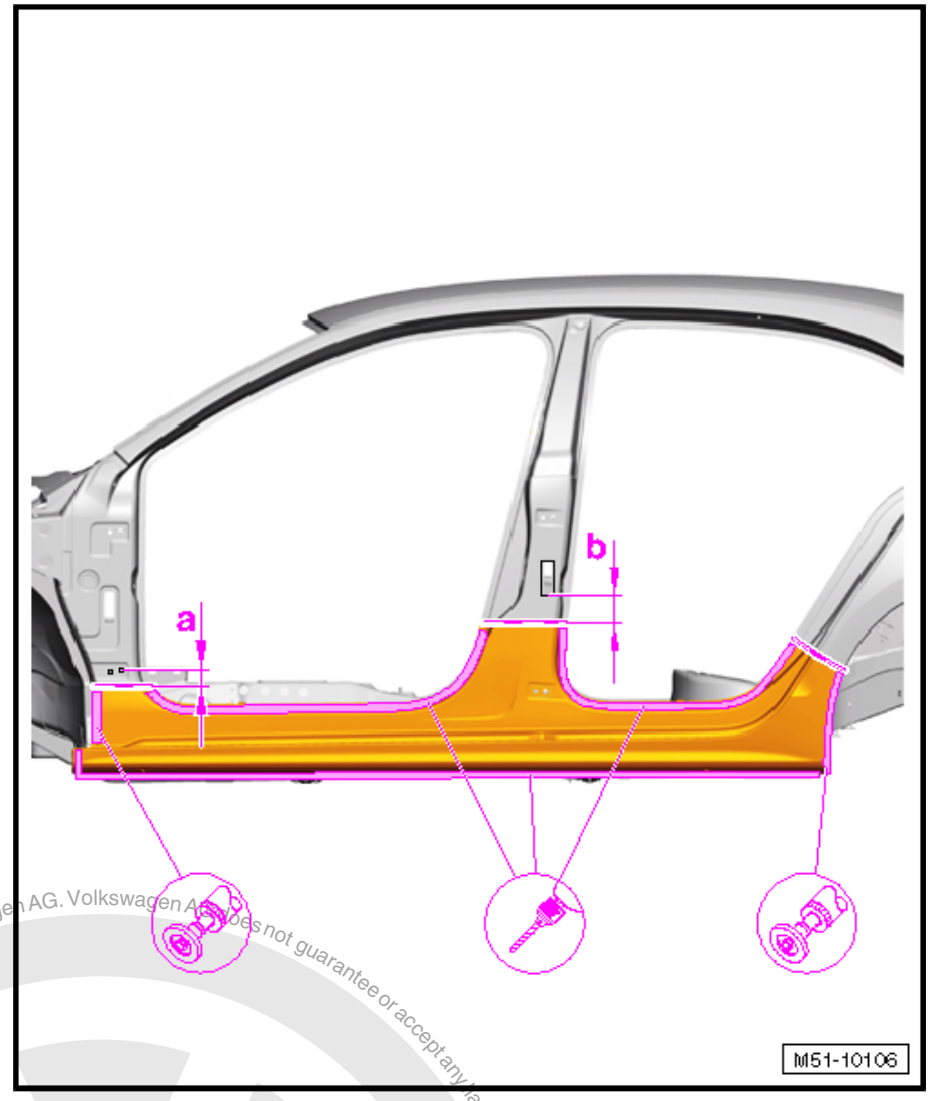
13.2 Removing

Note

- *Be sure not to damage the metal panels behind it when making the separating cut.*
- *Always replace the reinforcement for the A- or B-pillar if it is damaged.*
- *The reinforcement for the A- or B-pillar must not be rewelded for safety reasons »crash safety«!*



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– Place separating cuts as shown.

Dimension -a- = 30 mm

Dimension -b- = 50 mm.

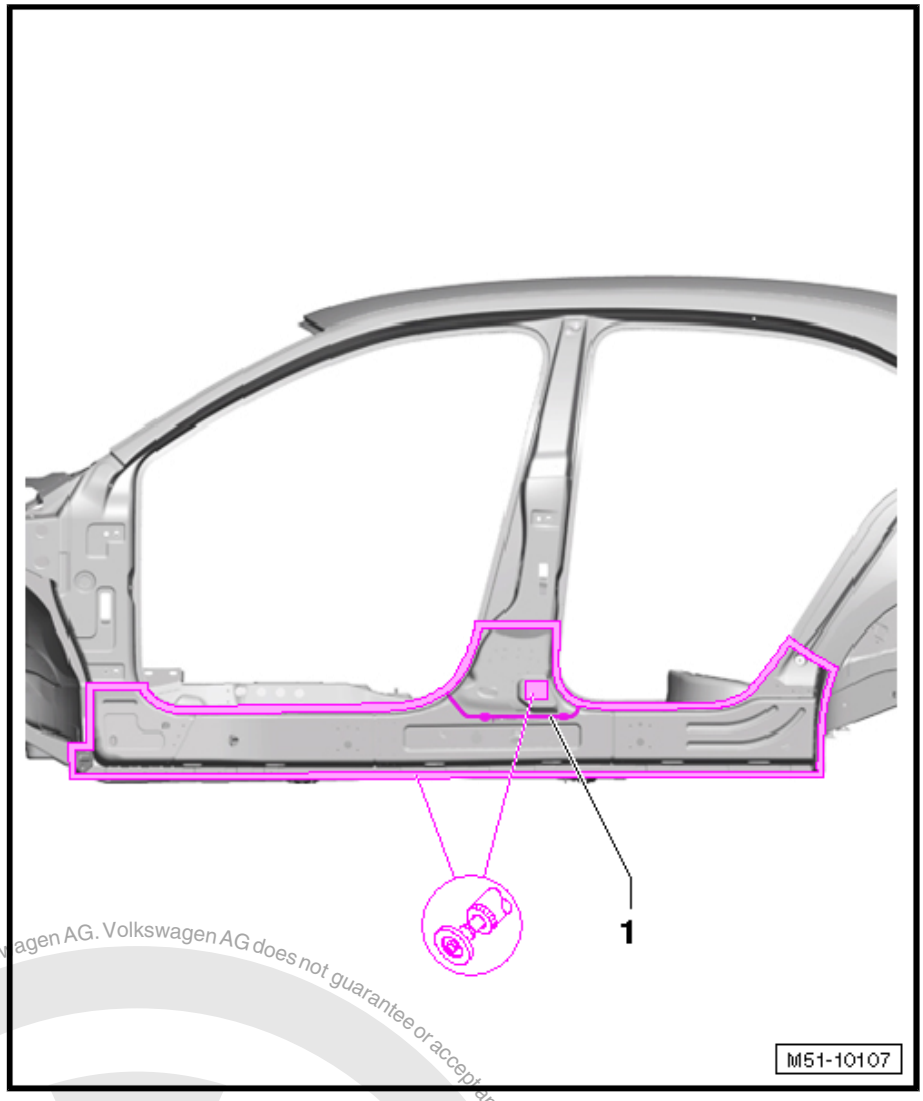
– Separate the original joint.

– Grind the outer edge of the wheel housing.

Note

Foam residue -1- must be removed as much as possible before sanding work.

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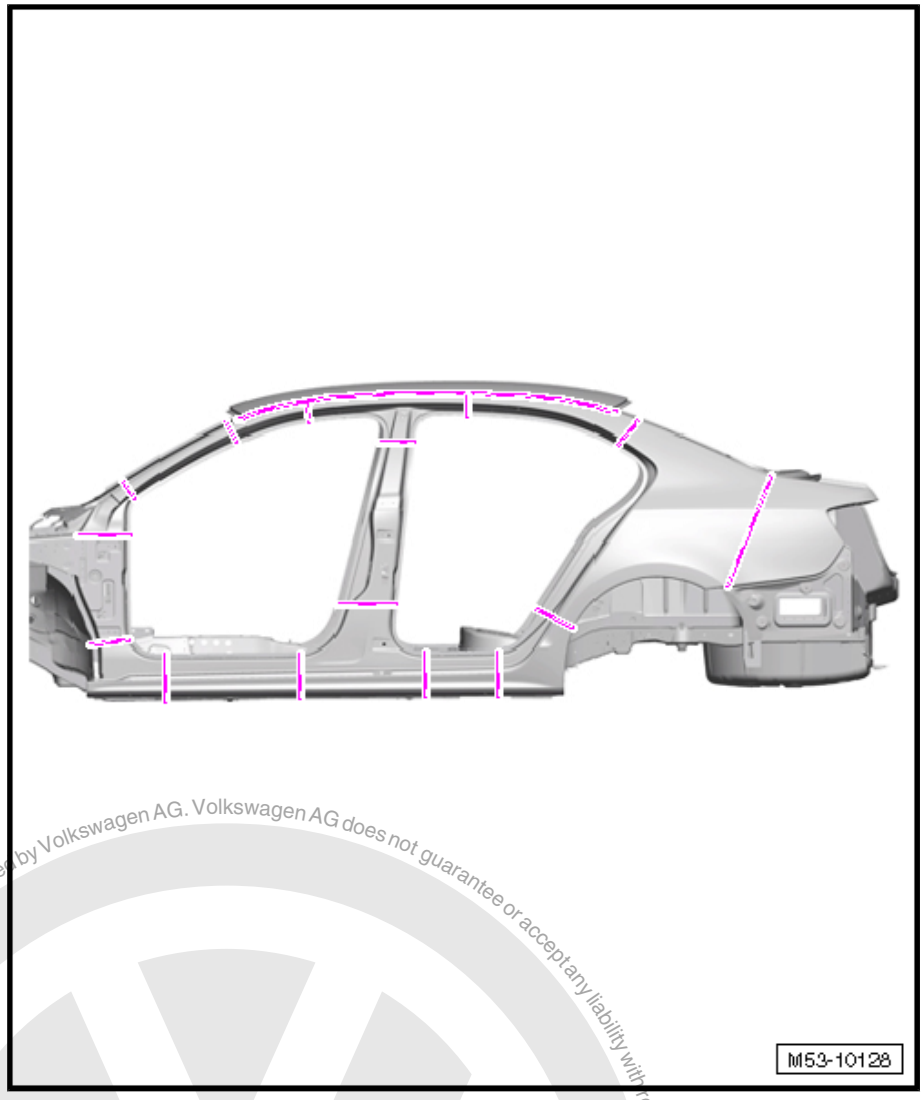
– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.
– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
– Lightly sand the adhesive surfaces in the connection.
– Clean the flanging area on wheel arch (it must be free of dust and grease).

13.3 Installing

Note

When using different types of steel and materials of different strengths, one of the special tools listed are required to perform repair work correctly, refer to ⇒ “13.1 Tools”, page 211 .

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Note

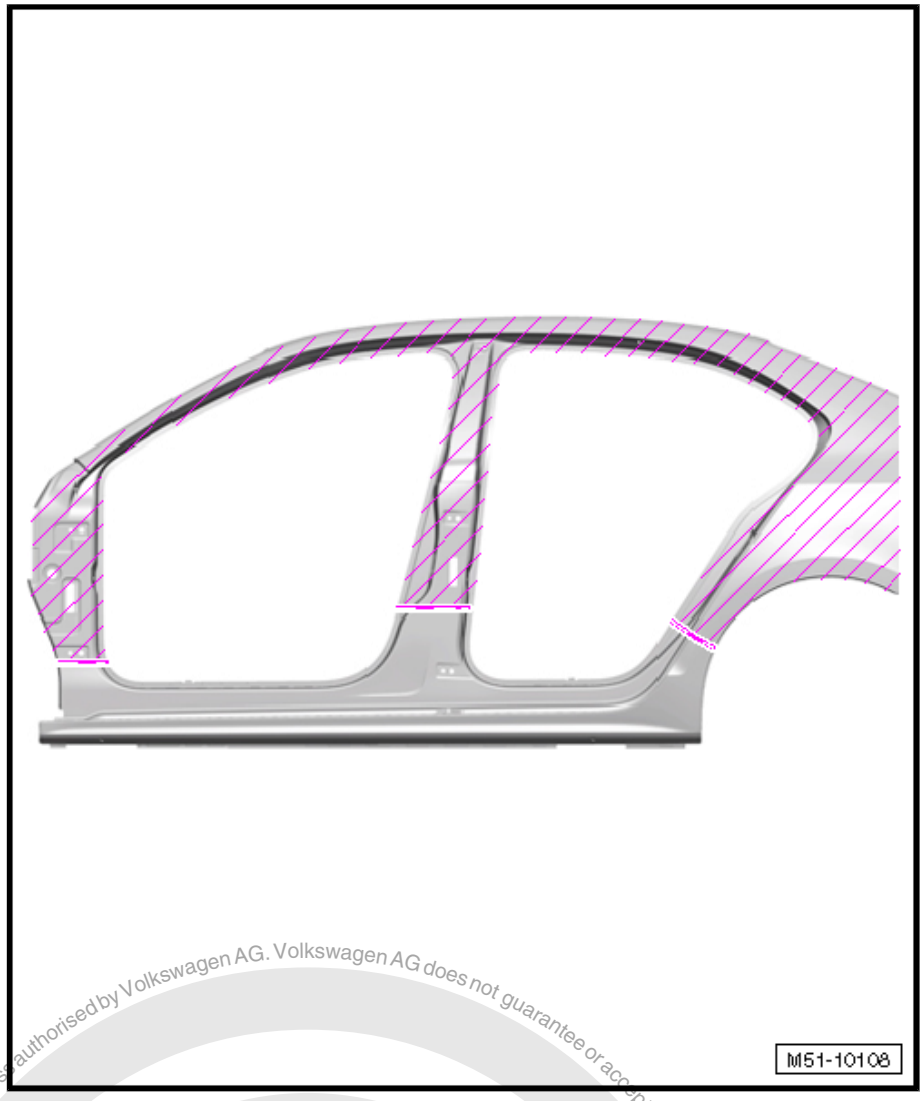
MIG soldered seams/gas-shielded arc continuous weld seam are permitted on the separating cuts shown in the illustration.

13.3.1 Preparing New Parts

New Part

- Side panel or side panel sub-part for partial replacement
- Molded Foam Part
- 2K Body Adhesive - D 180 KD3 A2-

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– Transfer separating cuts onto new part and cut to shape.

13.3.2 Molded Foam Parts

Observe Repair Notes.

Molded foam parts, refer to ⇒ General Information; Body Repairs, Body Collision Repair ; General Information, Molded Foam Parts

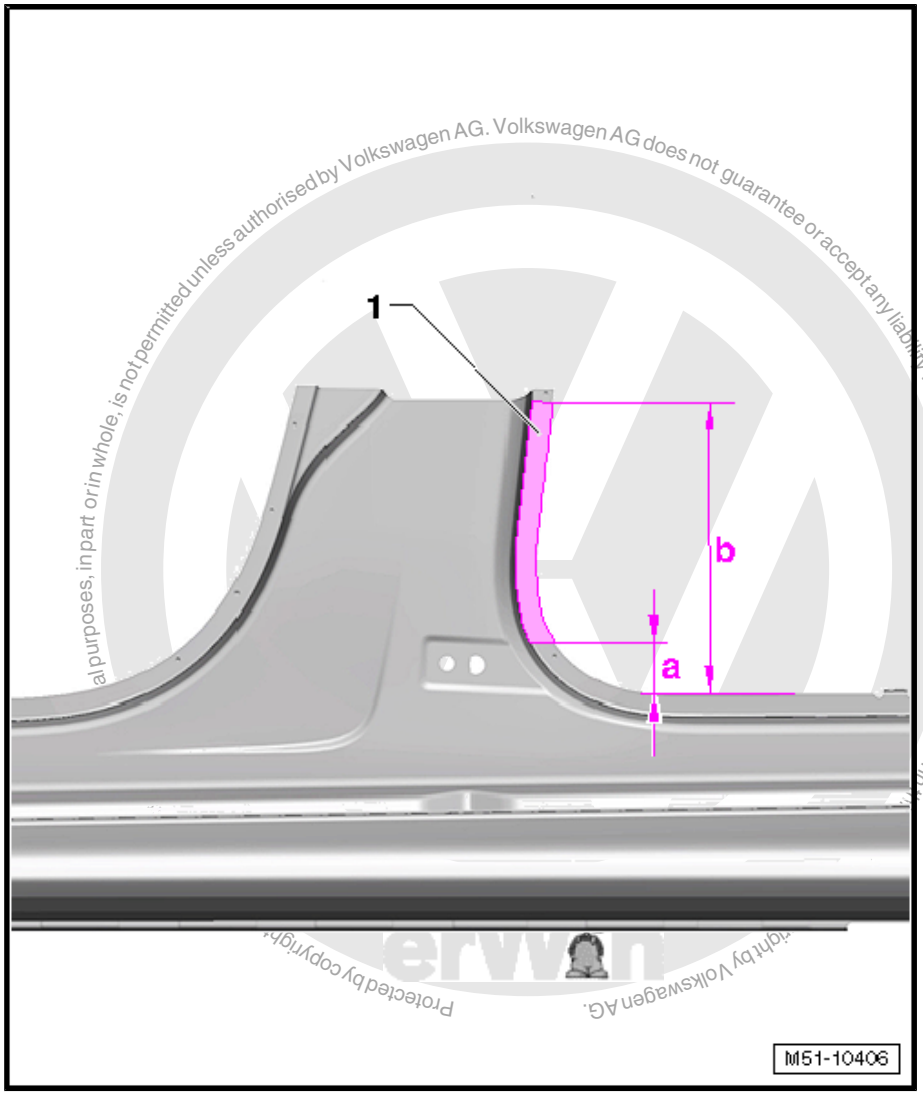
Position of molded foam parts, refer to
⇒ “5 Molded Foam Parts”, page 7 .

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13.3.3 Marking Area in Which Welding Must Not Be Performed

Note

- *For reasons of safety »crash safety«, area -1- marked in the illustration must not be welded when welding the sill panel.*
- *It is important to maintain the indicated dimensions.*



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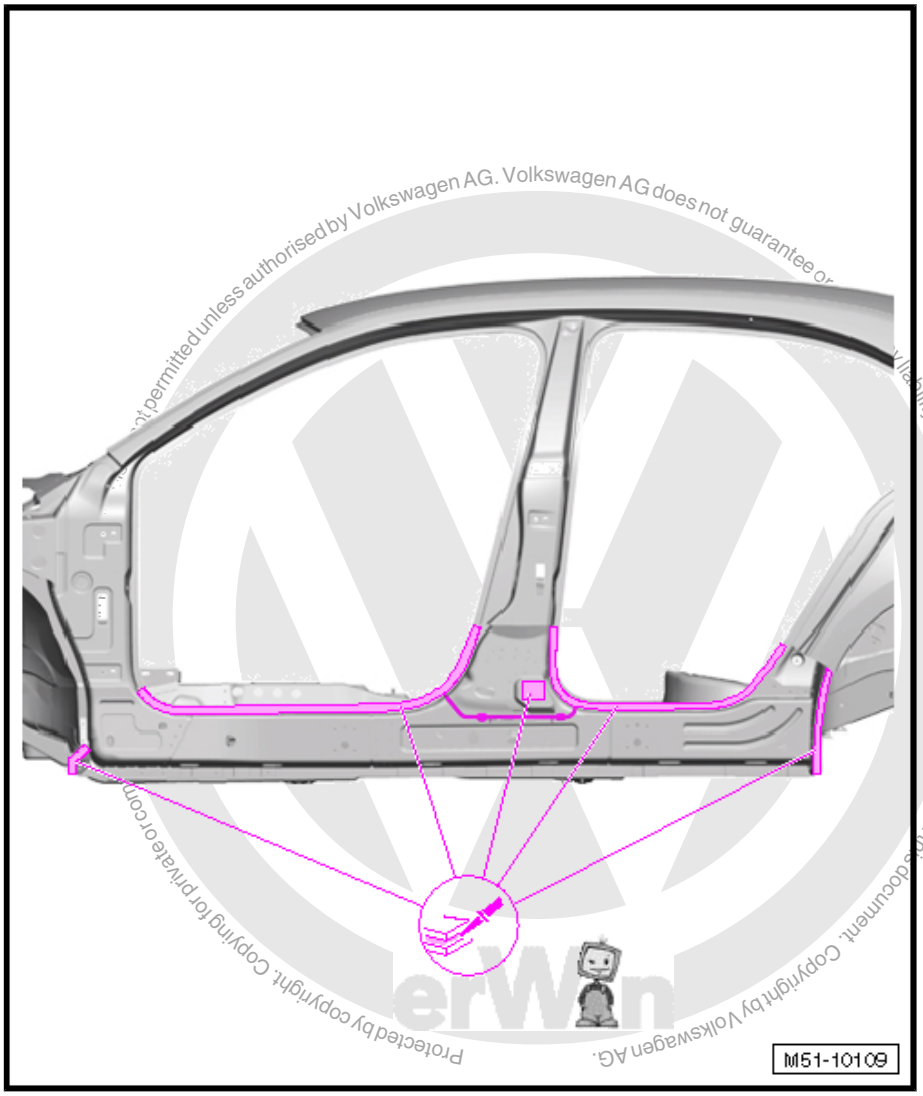
– Mark the areas -1- on the sill panel that need to be welded.

- Dimension -a- = 40 mm
- Dimension -b- = 240 mm

13.3.4 Welding

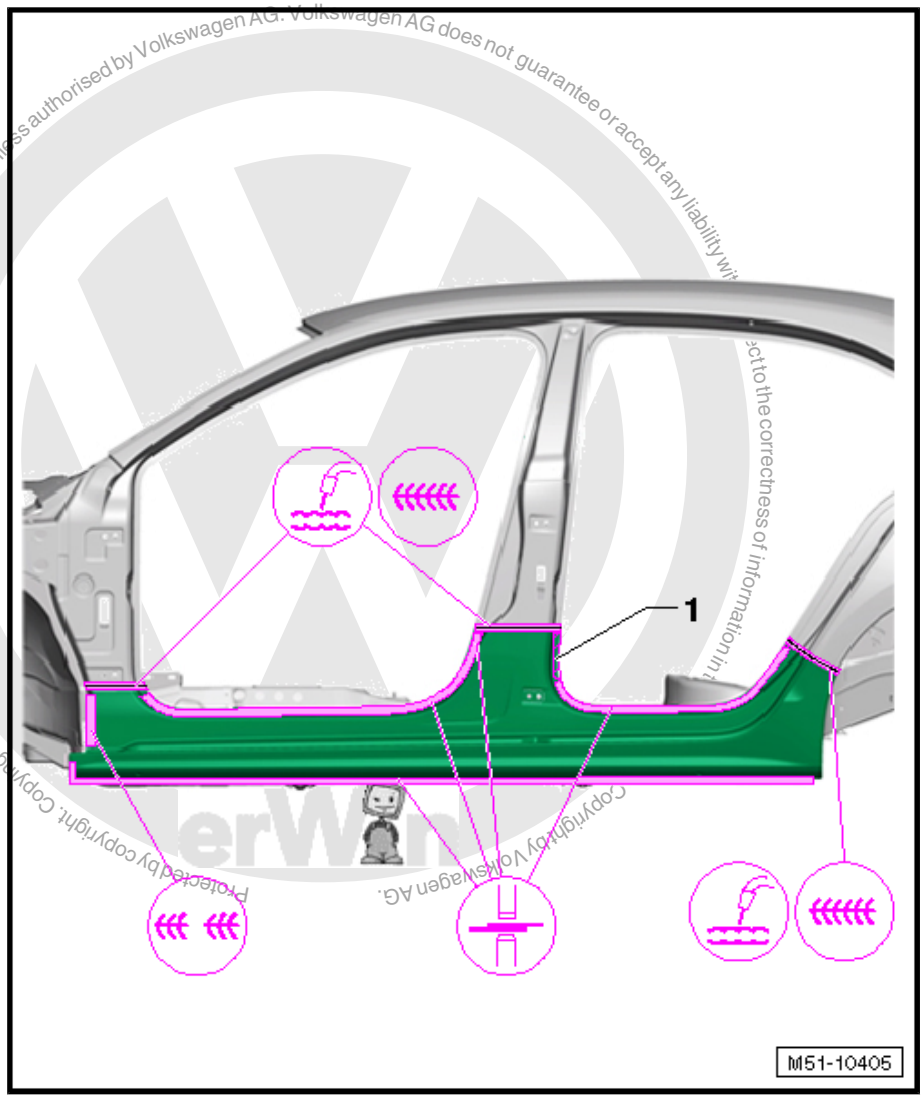
Note

- *New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.*
- *The holes for the hinge mount must be cleaned after applying the adhesive.*



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– Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.
– Fit the new part to vehicle standing on its wheels or on an Alignment Bracket Set and secure.
– Check fit with attachments.



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Note

Pay attention to area -1- in which welding must not be performed.

- Weld the separation cuts, either MIG-L stitch weld seam or a gas-shielded arc continuous weld seam
- Weld the door openings and the sill panel with a straight-line spot weld seam.
- Weld the sill panel to the A-pillar reinforcement with a gas-shielded arc continuous weld seam (staggered).
- Reform the wheel arch flange.

RO: 51 49 55 50

14 Front Sill Panel Reinforcement, Replacing, Non-Hybrid Vehicles

DANGER!

Follow all safety precautions.

If welding and cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- The sill panel is already removed, refer to ⇒ “13 Sill Panel, Removing and Installing”, page 210 .
- A-pillar reinforcement already removed, refer to ⇒ “8 A-Pillar Reinforcement, Replacing Partial Section”, page 168 .

1 - Front Sill Panel Reinforcement

2 - Sill Panel Fillet Plate

Is also removed.

3 - Adhesive Areas

4 - Separating Cut

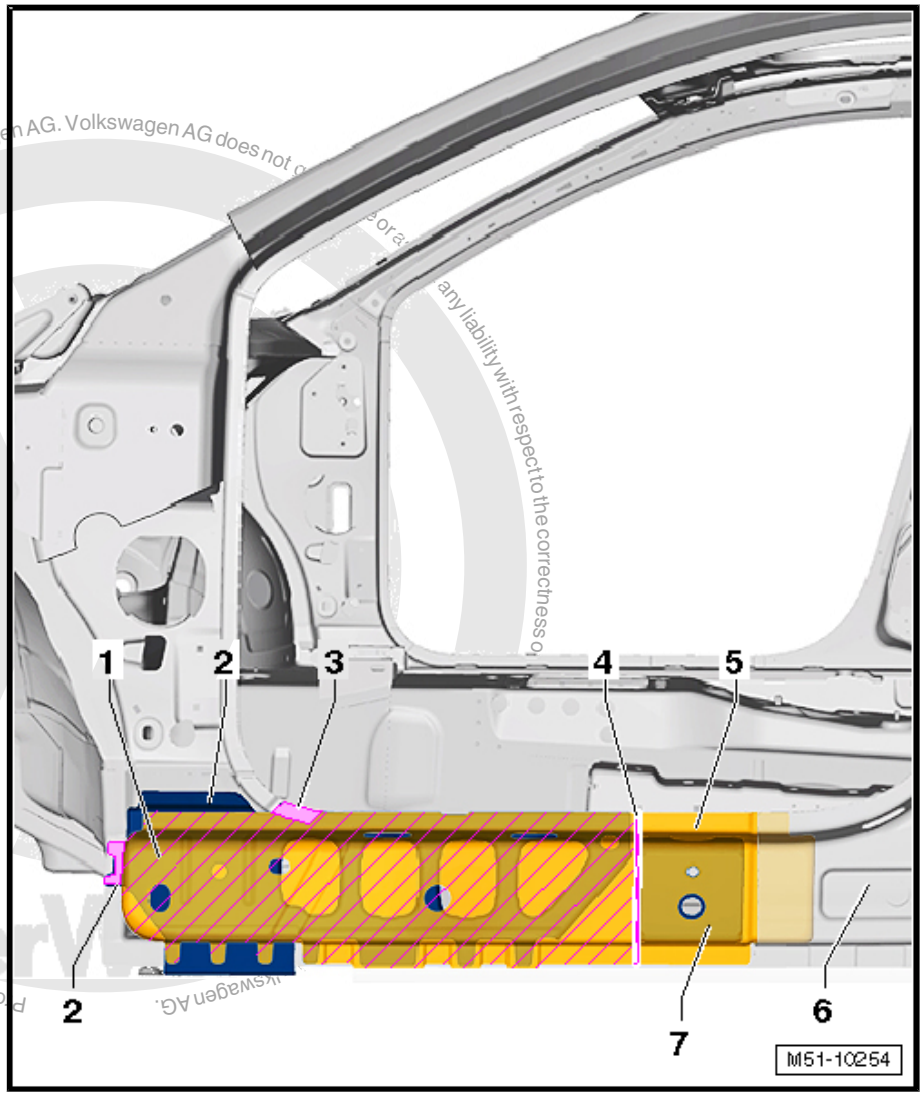
5 - Front Sill Panel Reinforcement Partial Section

Is also not removed.

6 - B-Pillar Reinforcement

7 - End Plate

Is also not removed.



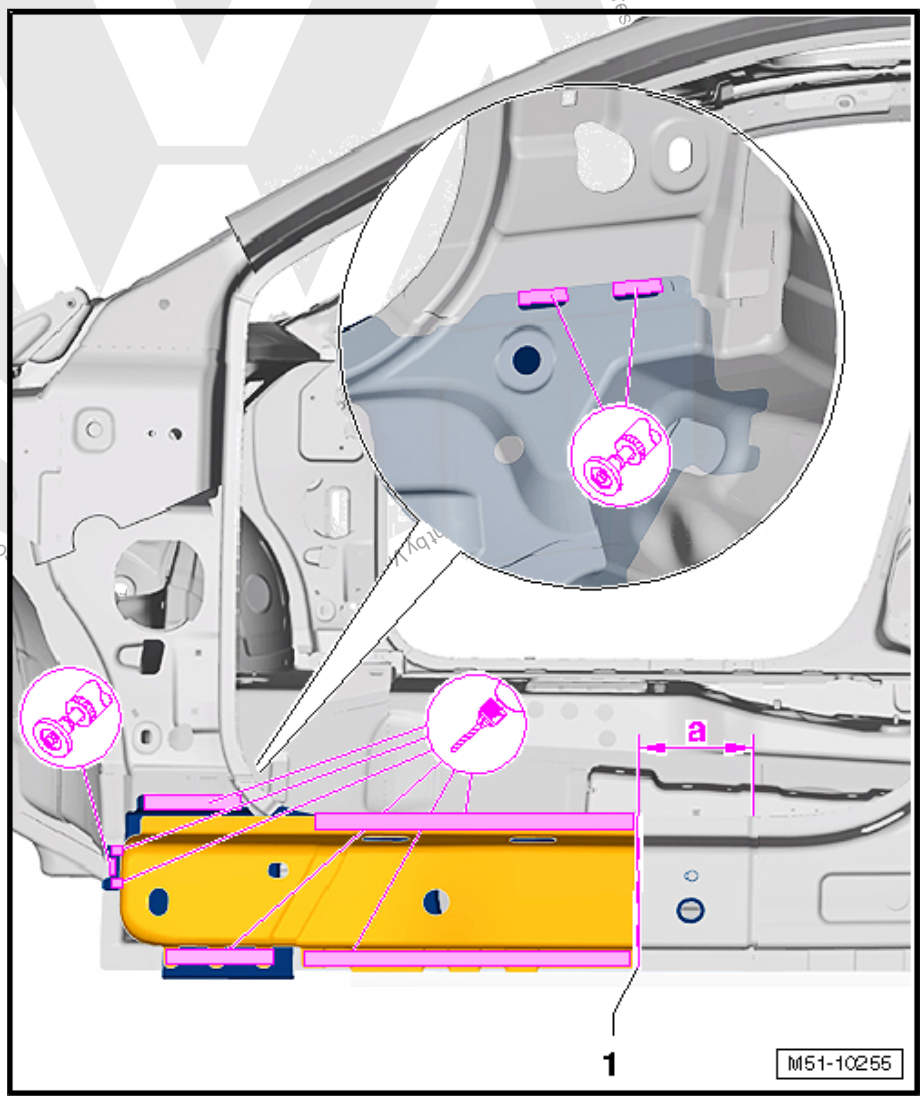
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14.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

14.2 Removing



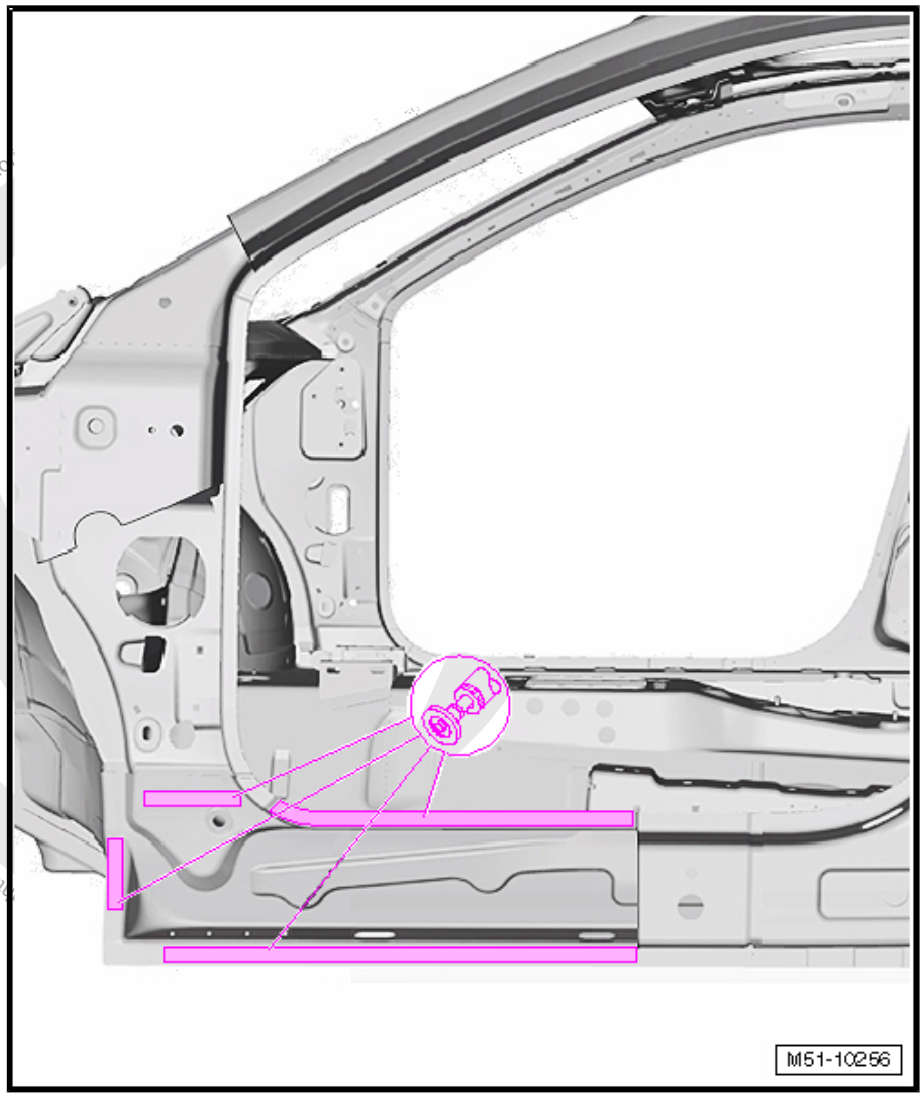
– Make a separating cut -1- according to dimension -a-.

Dimension -a- = 140 mm

Note

When performing separating cuts, ensure flange area and the end plate below are not separated.

– Loosen the original joint for the inner sill panel and for the inner A-pillar.



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– Remove residual material.

– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

14.3 Installing

Note

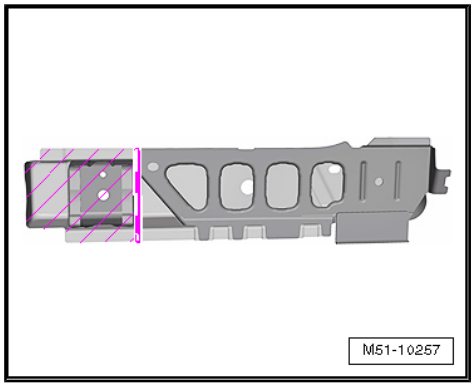
When using different types of steel and materials of different strengths, one of the special tools listed are required to perform repair work correctly, refer to ⇒ *"14.1 Tools", page 220* .

14.3.1 Preparing New Parts

New Part

- Front sill panel reinforcement
- 2K Body Adhesive - D 180 KD3 A2-

– Transfer separating cut onto new part and cut to shape.

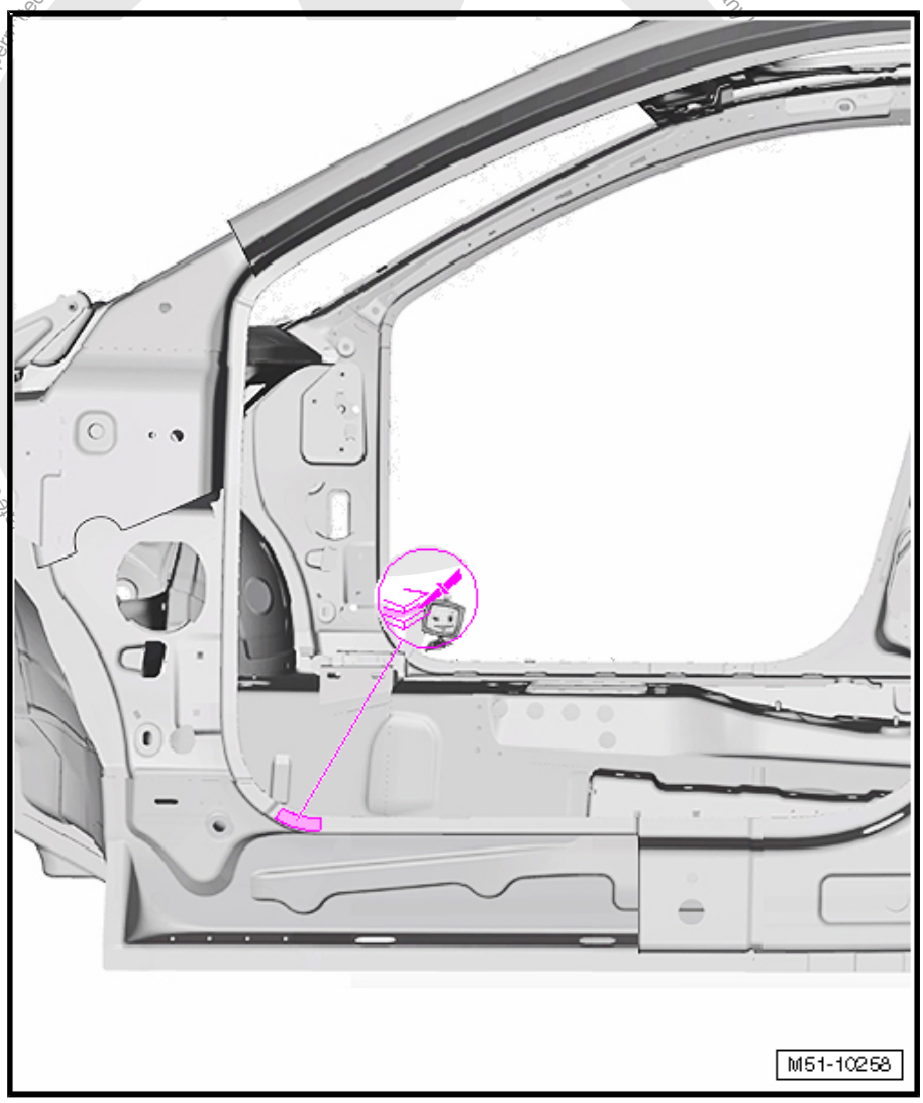


14.3.2 Welding

Note

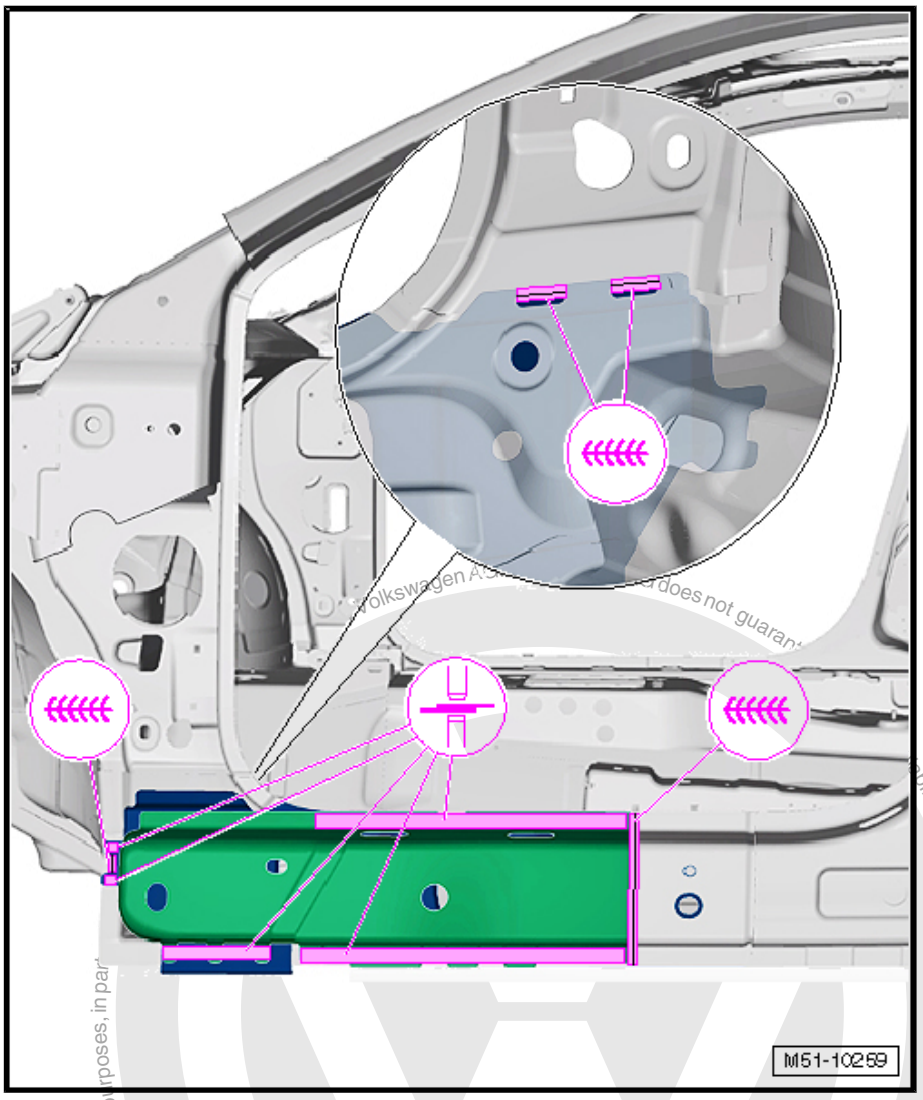
New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

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– Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.

– Fit new part to vehicle standing on Alignment Bracket Set and secure.
– Check fit with other components.



– Restore the original joint for the inner sill panel and for the inner A-pillar, straight-line spot weld seam inverter and gas-shielded arc continuous weld seam.
– Weld the separating cut using a gas-shielded arc continuous weld seam.
– Install the A-pillar reinforcement, refer to ⇒ “8.3 Installing”, page 171 .
– Install the sill panel, refer to ⇒ “13.3 Installing”, page 213.

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15 Front Sill Panel Reinforcement, Replacing, Hybrid Vehicles

DANGER!

Follow all safety precautions.

If welding and cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- The sill panel is already removed, refer to ⇒ “13 Sill Panel, Removing and Installing”, page 210 .
- A-pillar reinforcement already removed, refer to ⇒ “8 A-Pillar Reinforcement, Replacing Partial Section”, page 168 .

1 - Front Sill Panel Reinforcement

2 - Sill Panel Fillet Plate

Is also removed.

3 - Adhesive Areas

4 - Separating Cut

5 - Front Sill Panel Reinforcement Partial Section

Is also not removed.

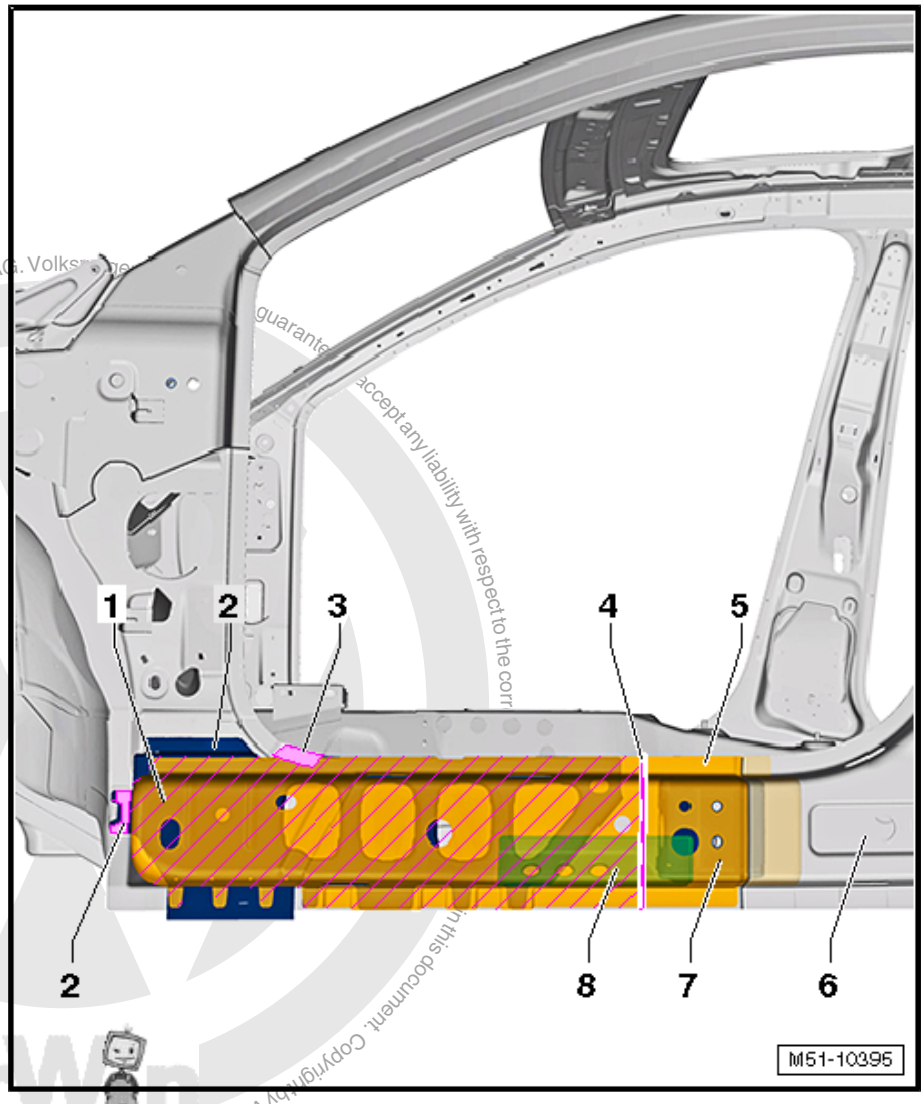
6 - B-Pillar Reinforcement

7 - End Plate

Is also not removed.

8 - Double Brace

Is also removed.



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15.1 Tools

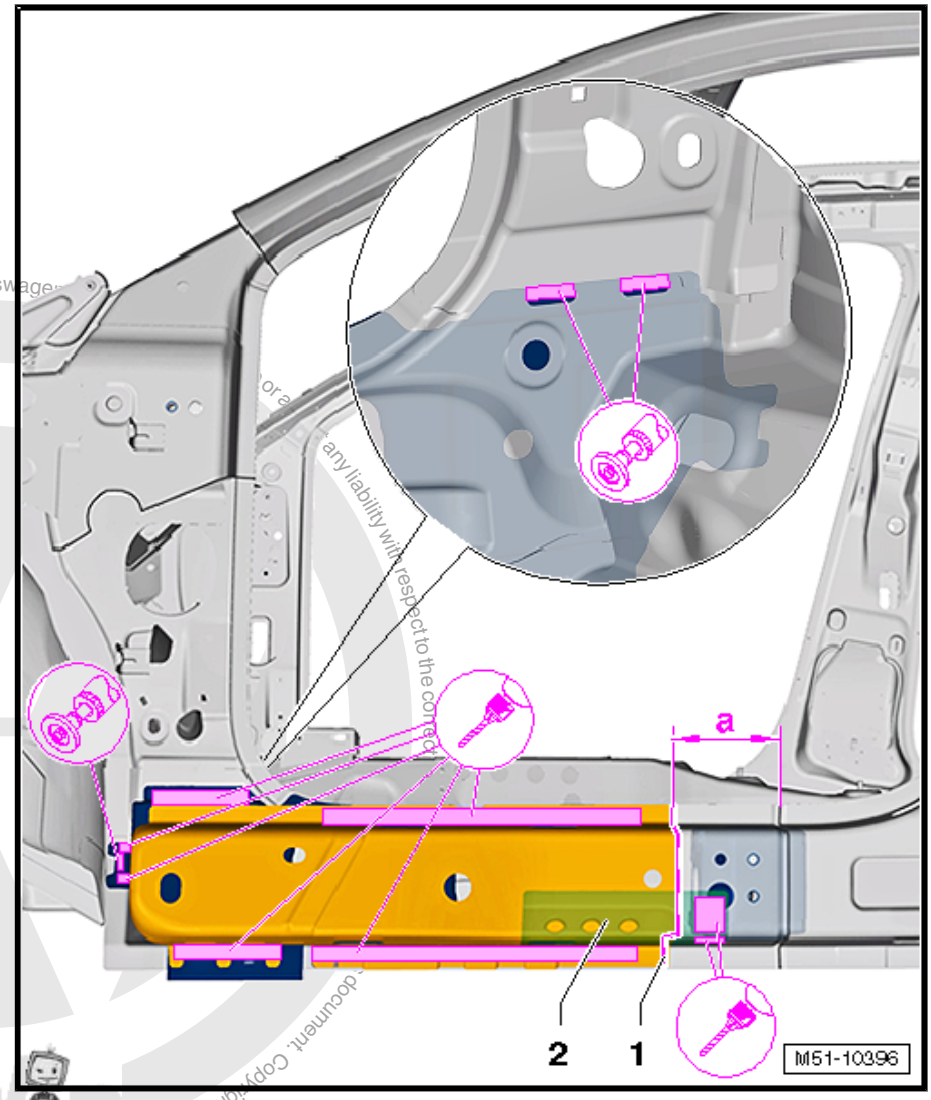
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

15.2 Removing

Note

The brace -2- may get cut through when making the separation cut -1-. Then it will be necessary to remove the brace completely and replace it.



– Make a separating cut -1- according to dimension -a-.

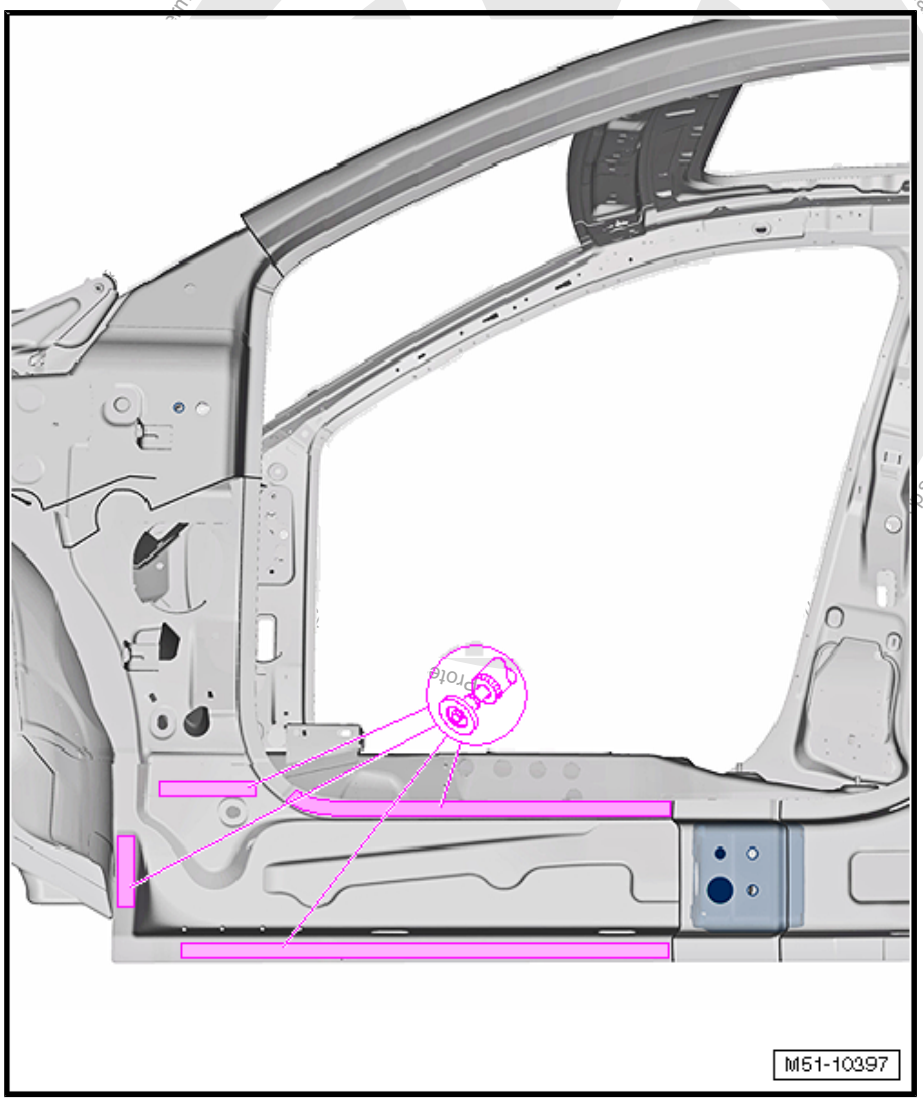
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Dimension -a- = 120 mm

– Loosen the original joint for the inner sill panel and for the inner A-pillar.

– Cut the original joint on the brace.



– Remove residual material.

– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

15.3 Installing

Note

When using different types of steel and materials of different strengths, one of the special tools listed are required to perform repair work correctly, refer to ⇒ *"15.1 Tools", page 225* *.*

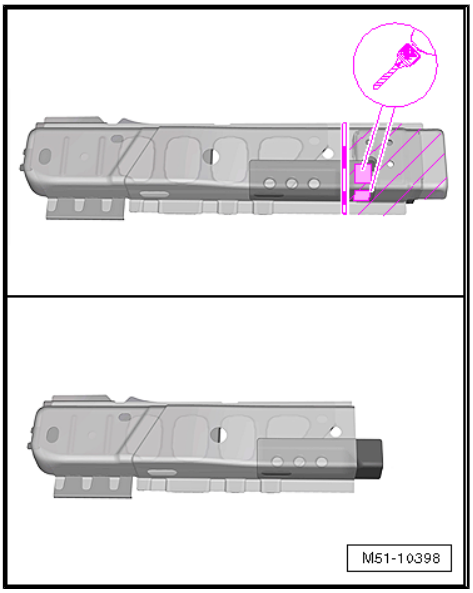
15.3.1 Preparing New Parts

New part

♦ Front sill panel reinforcement

♦ 2K Body Adhesive - D 180 KD3 A2-

– Transfer separating cut onto new part and cut to shape.



Note

Be careful not to damage the brace underneath when making the separation cut.

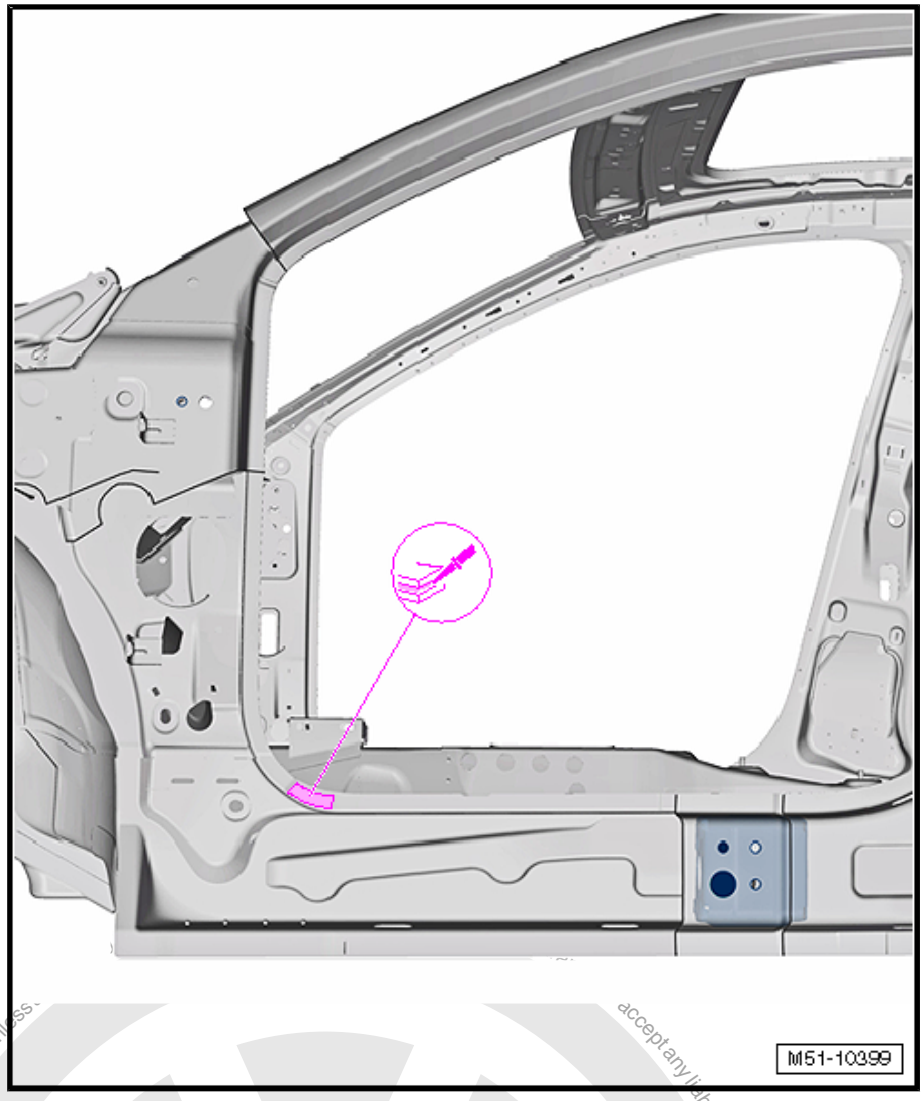
– Remove the original joint on the brace.

15.3.2 Welding

Note

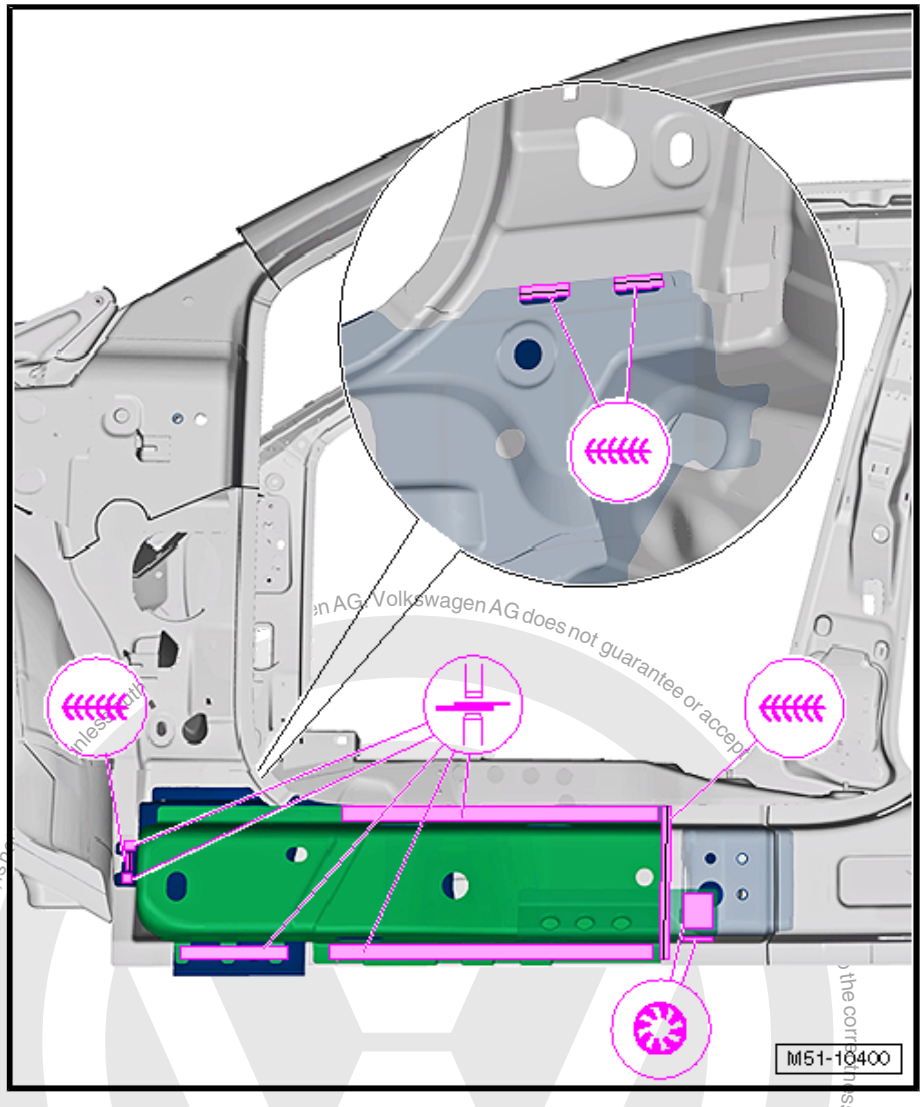
New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

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– Apply 2K Body Adhesive - D 180 KD3 A2- as illustrated.
– Fit new part to vehicle standing on Alignment Bracket Set and secure.
– Check fit with other components.

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- Restore the original joint for the inner sill panel and for the inner A-pillar, straight-line spot weld seam inverter and gas-shielded arc continuous weld seam.
- Weld the separating cut using a gas-shielded arc continuous weld seam.
- Weld the brace with a gas-shielded arc plug weld seam.
- Install the A-pillar reinforcement, refer to ⇒ “8.3 Installing”, page 171 .
- Install the sill panel, refer to ⇒ “13.3 Installing”, page 213 .

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RO: 51 49 55 52

16 Rear Sill Panel Reinforcement, Replacing

DANGER!

Follow all safety precautions.

If welding and cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- The sill panel is already removed, refer to ⇒ “13 Sill Panel, Removing and Installing”, page 210 .

1 - Rear Sill Panel Reinforcement

2 - Outer Wheel Housing Liner

3 - Separating Cut

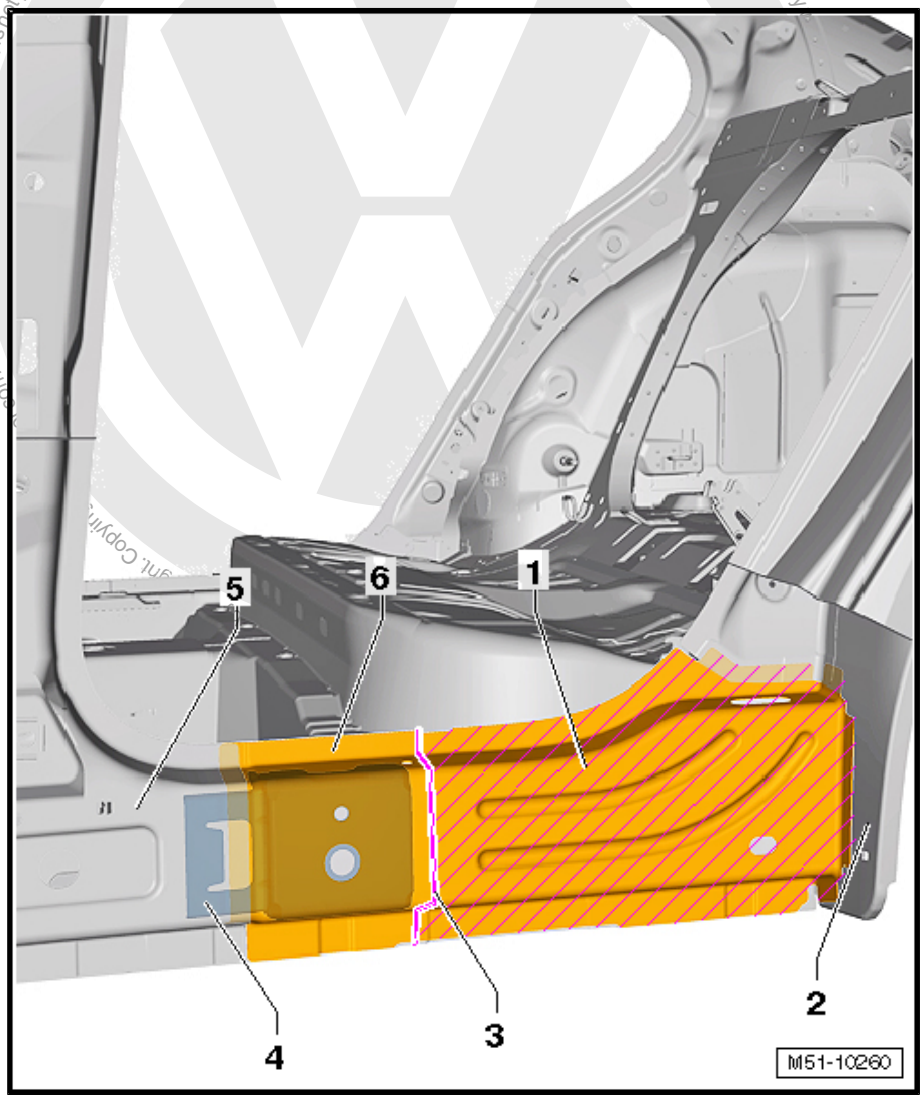
4 - End Plate

Is also not removed.

5 - B-Pillar Reinforcement

6 - Rear Sill Panel Reinforcement Partial Section

Is also not removed.



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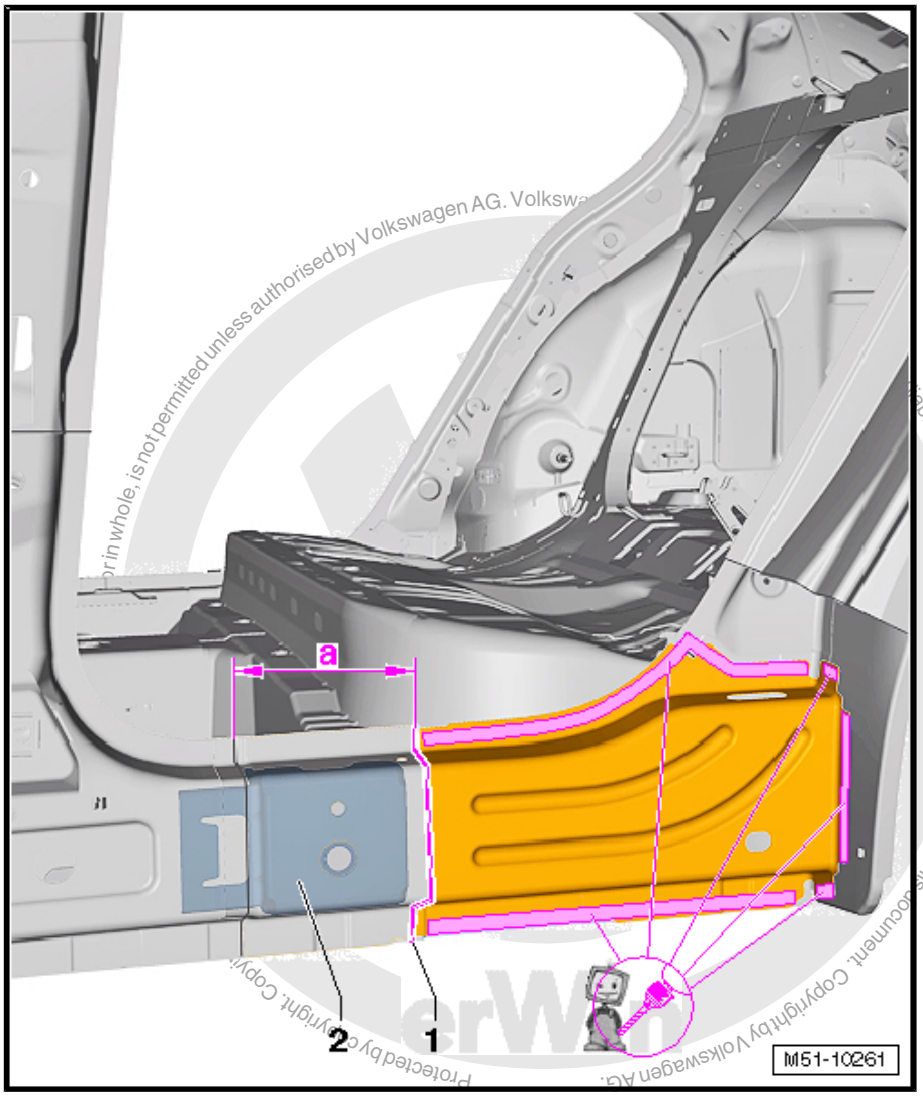
16.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

16.2 Removing

- The sill panel is already removed, refer to ⇒ “13 Sill Panel, Removing and Installing”, page 210 .



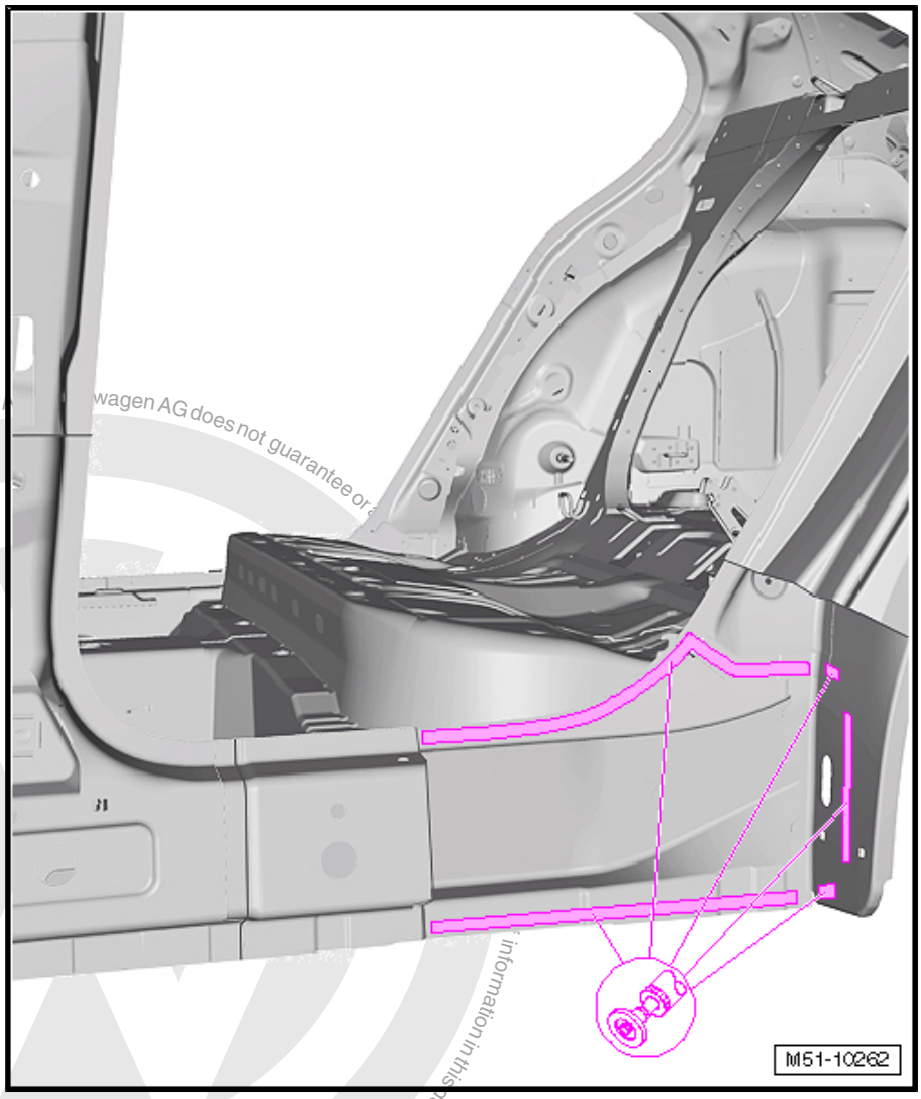
– Make a separating cut -1- according to dimension -a-.

Dimension -a- = 150 mm

Note

When performing separating cuts, ensure flange area and the end plate -2- below are not separated.

– Loosen original joint to inner sidemember.



– Remove residual material.

16.3 Installing

Note

When using different types of steel and materials of different strengths, one of the special tools listed are required to perform repair work correctly, refer to ⇒ “16.1 Tools”, page 231 .

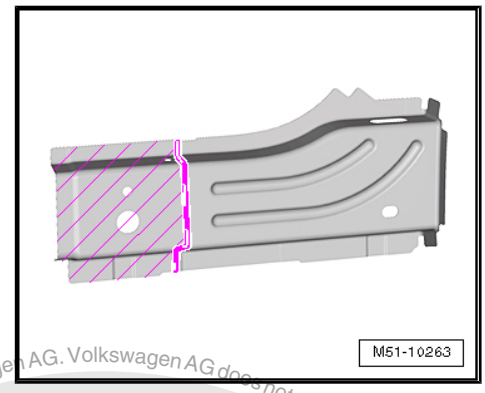
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16.3.1 Preparing New Parts

New Part

- ♦ Rear sill panel reinforcement

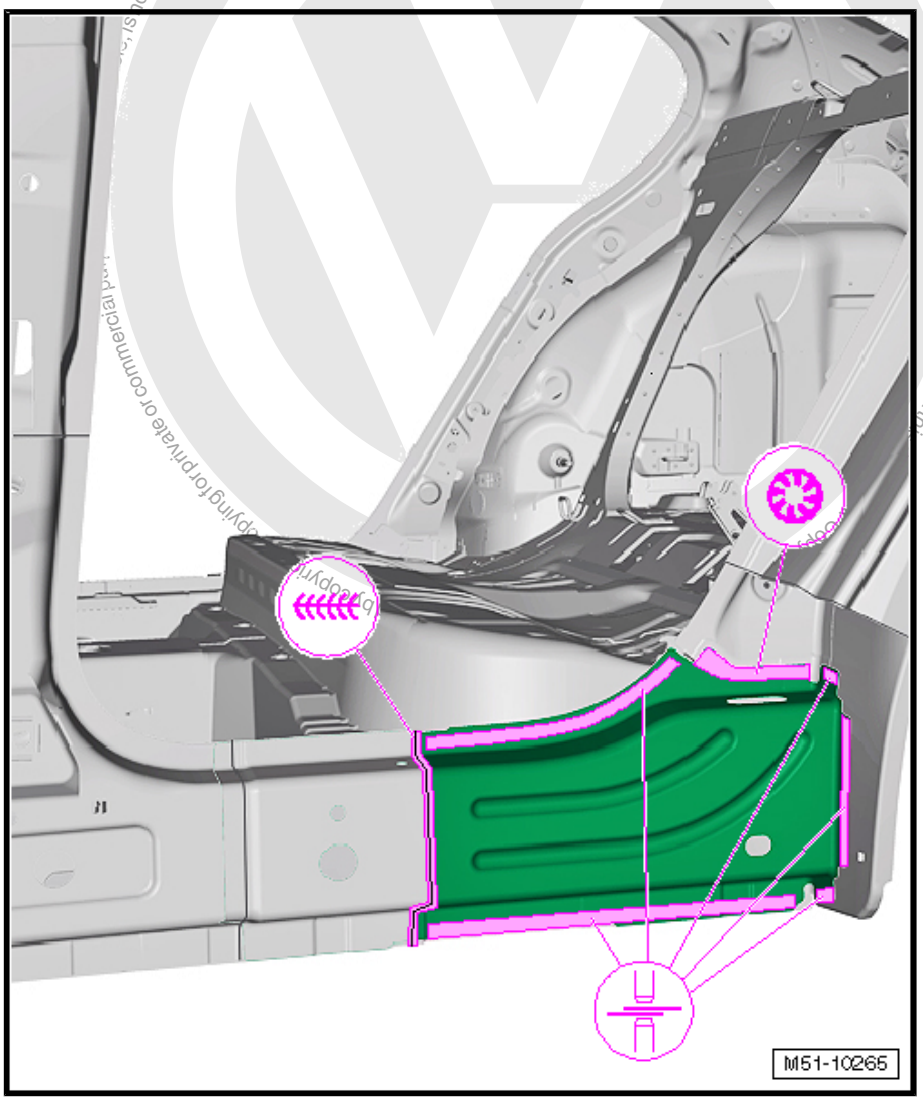
– Transfer separating cut onto new part and cut to shape.



16.3.2 Welding

– Fit new part to vehicle standing on Alignment Bracket Set and secure.

– Check fit with other components.



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- Attach the original joint to the inner sill panel and to the outer wheel housing liner, straight-line spot weld seam inverter.
- Attach the original joint to the inner side section using the, gas shielded arc plug weld seam.
- Weld the separating cut using a gas-shielded arc continuous weld seam.
- Install the sill panel, refer to ⇒ “13.3 Installing”, page 213 .

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RO: 51 69 55 56

17 Outer Seat Crossmember Mount, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

Note

- *If a thread in the outer seat cross member mount is damaged, then it must be replaced.*
- *If the outer seat cross member mount (with the VIN) must be replaced, then be sure to document the service according to all market specific legal requirements.*
- *The vehicle identification must be noted prior to welding the outer seat cross member mount.*

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1 - Outer Seat Crossmember Mount

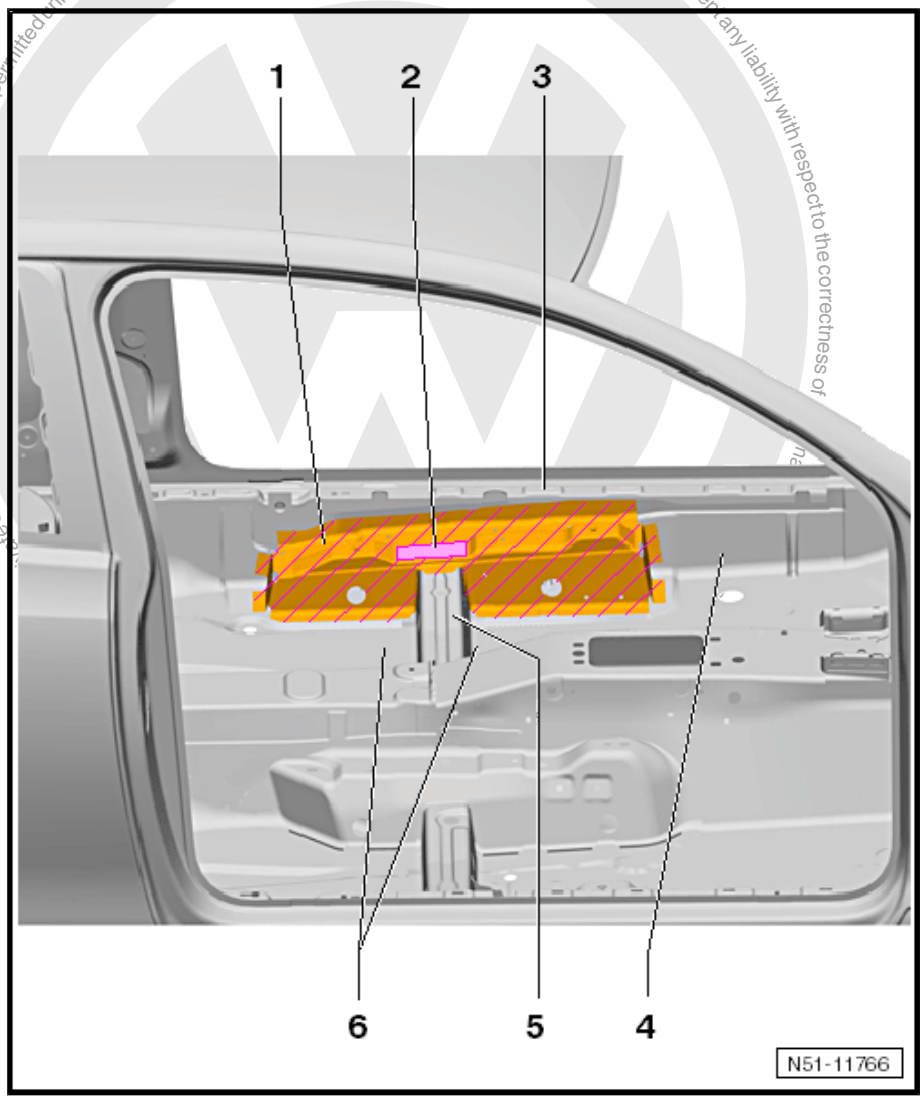
2 - VIN; on the Right Side of the Vehicle Only

3 - Inner Sill Panel Plate

4 - Inner Sill Panel

5 - Seat Crossmember

6 - Floor Panel

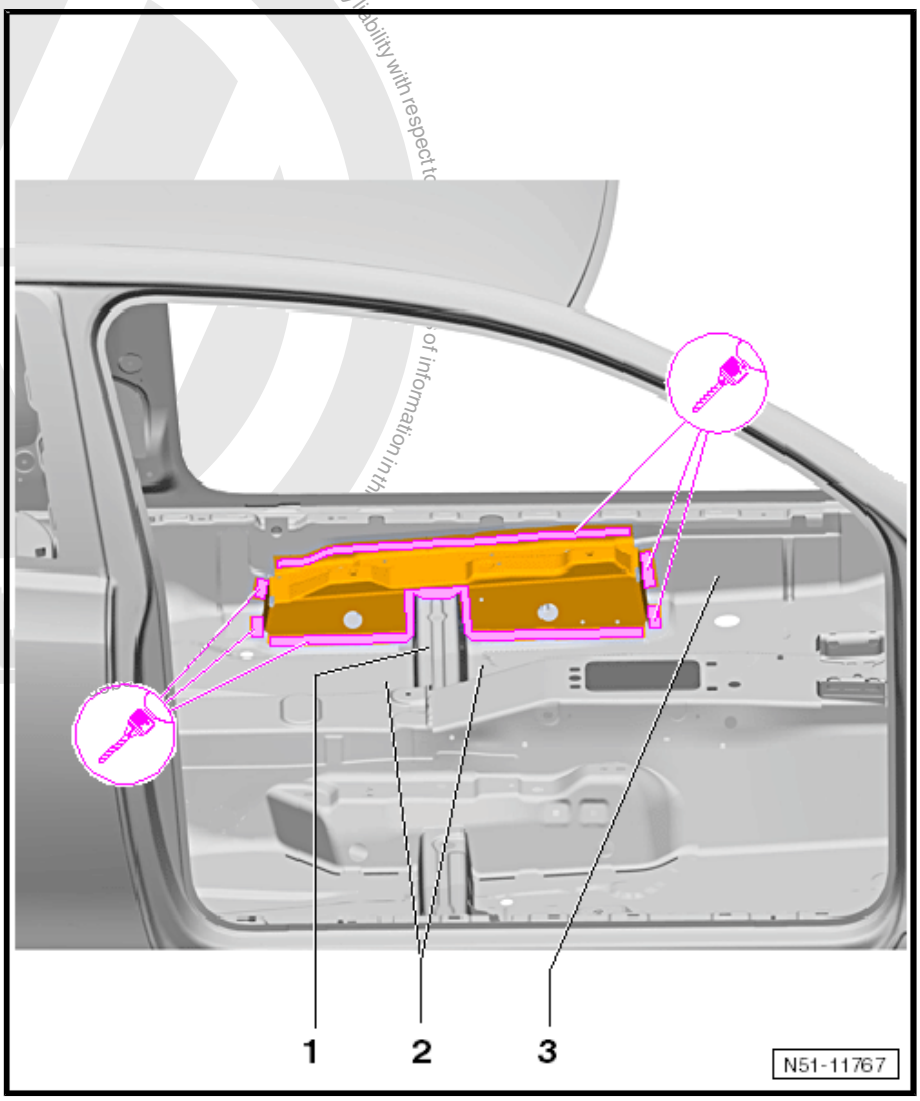


17.1 Tools

Note

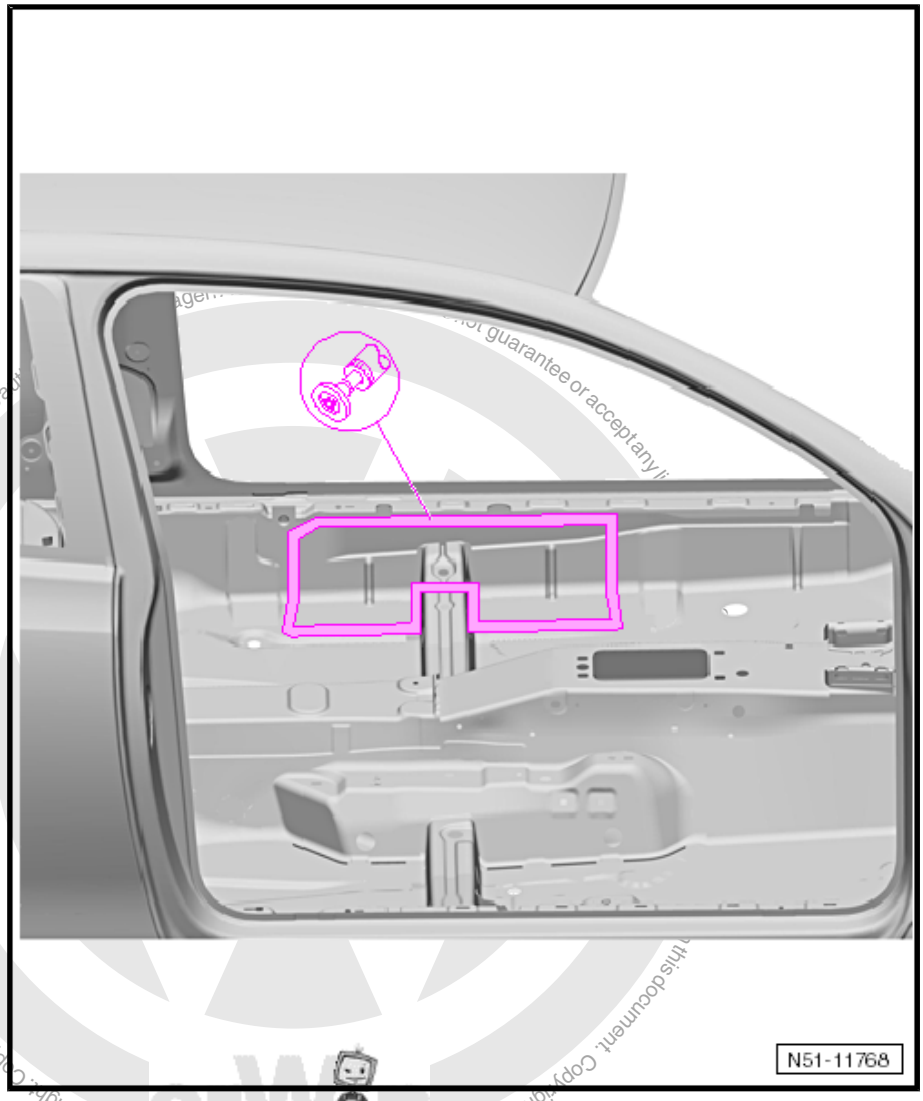
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

17.2 Removing



– Separate the original connection to the seat crossmember -1-, to the floor panel -2- and to the sill panel -3-.

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– Remove residual material.

17.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "17.1 Tools", page 236 .

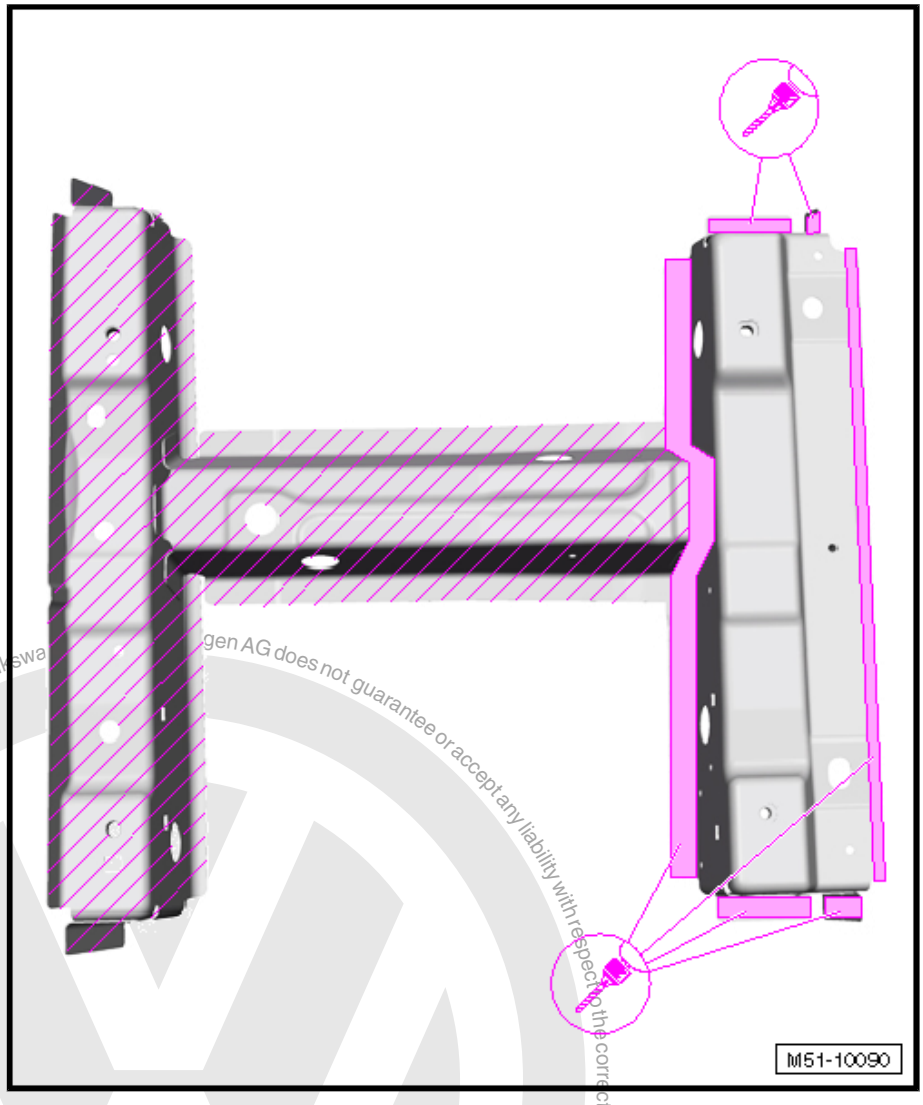
17.3.1 Preparing New Parts

New Part

- Seat mount

Note

Before installing if necessary add the VIN.



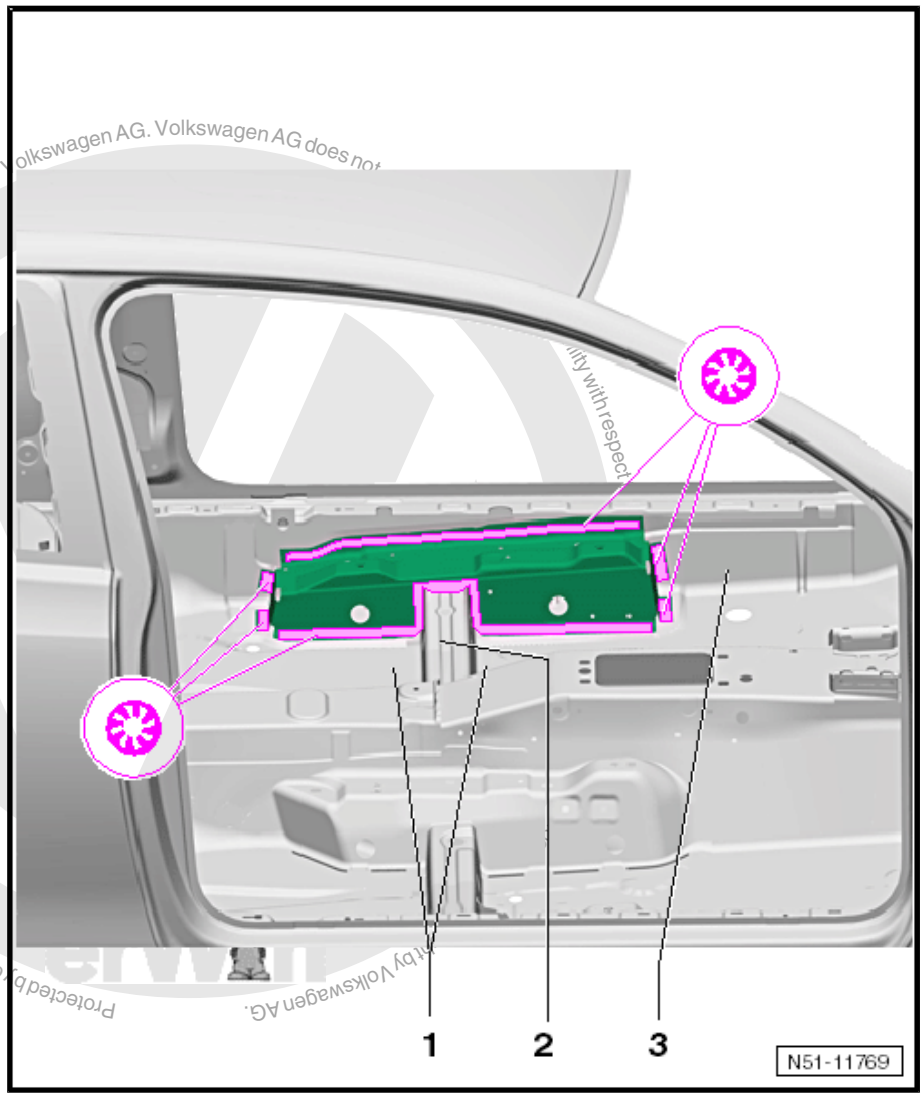
– Separate the exterior seat crossmember mount from the new part.
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

17.3.2 Welding

– Align the new part and secure it in place.

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– Check the fit with the seat.



– Weld the outer seat cross member mount to the floor panel -1-, to the seat cross member -2- and to the inner sill panel -3- with a gas-shielded arc plug weld seam.

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RO: 51 69 55 58

18 Inner Seat Crossmember Mount, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

Note

If a thread in the inner seat cross member mount is damaged, then it must be replaced.

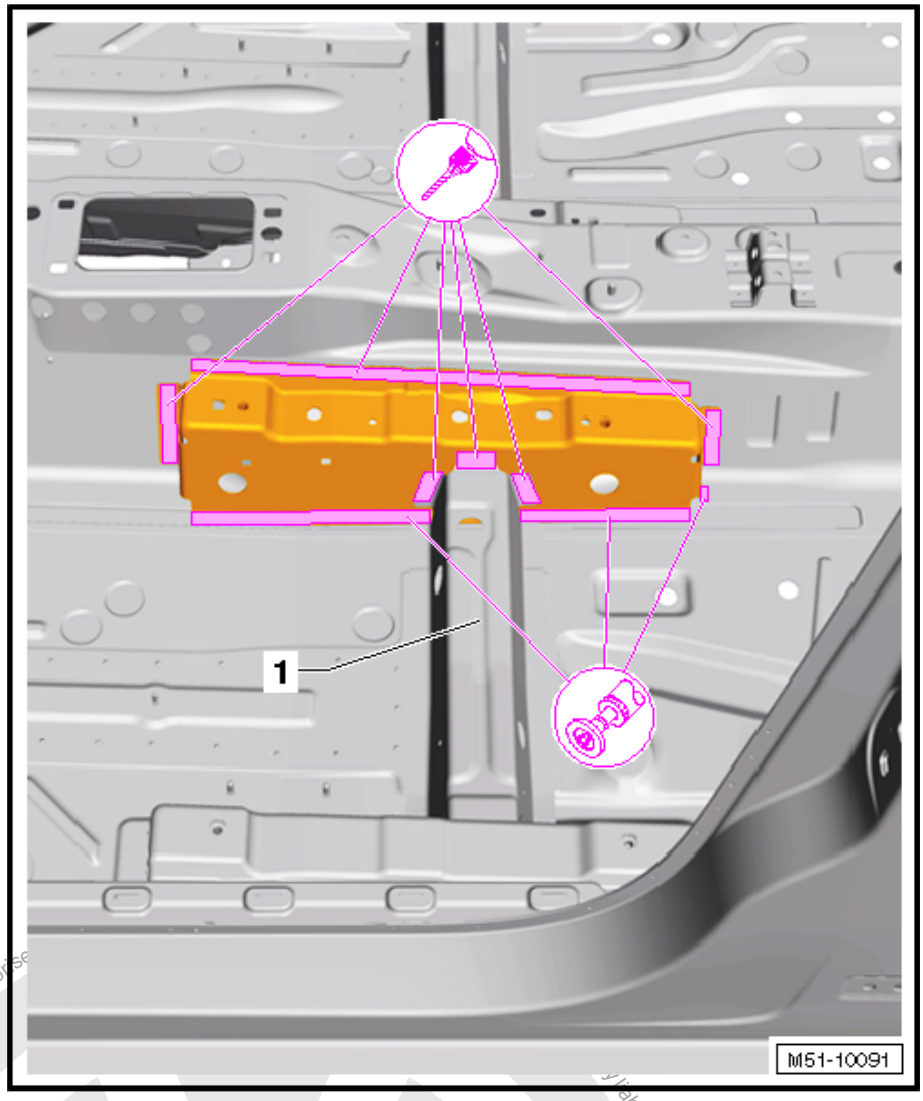
18.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

18.2 Removing

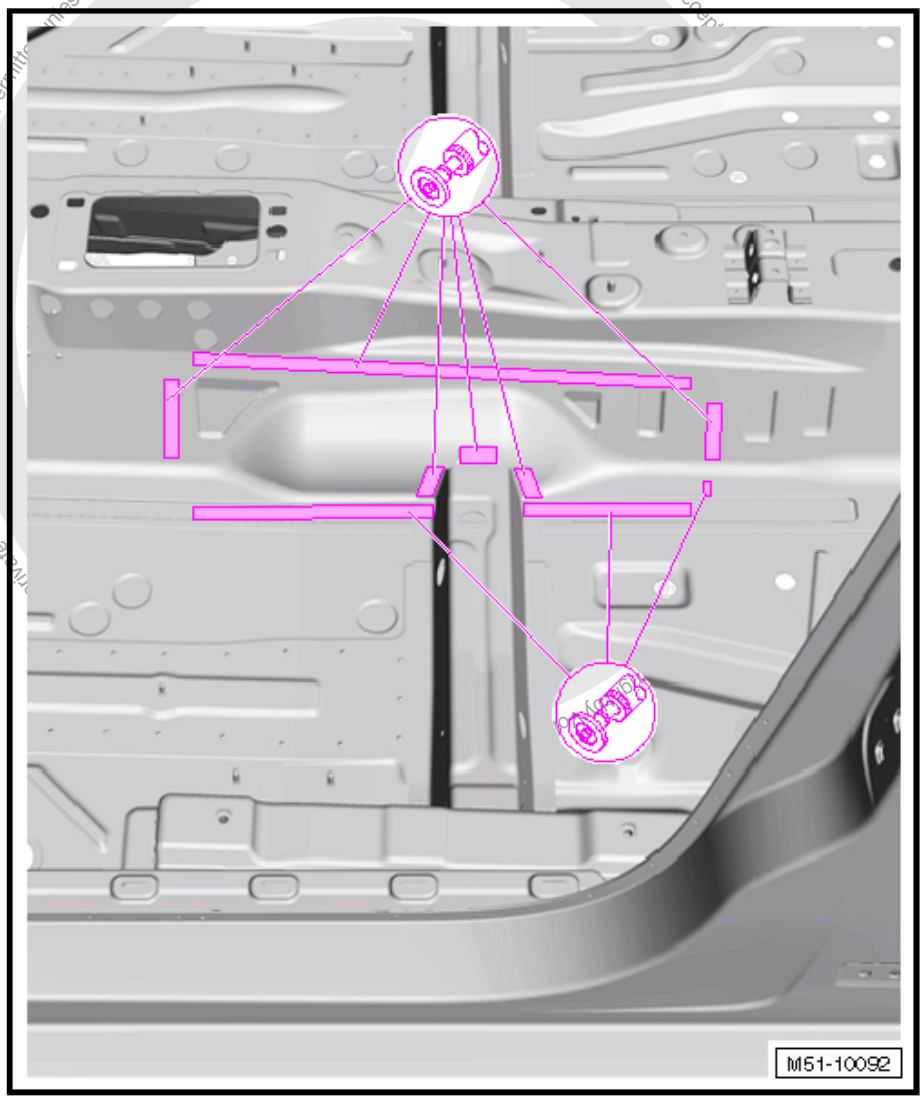
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– Cut the original joint on the center tunnel, on the floor panel and on the center seat crossmember -1-.

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– Remove residual material.

18.3 Installing

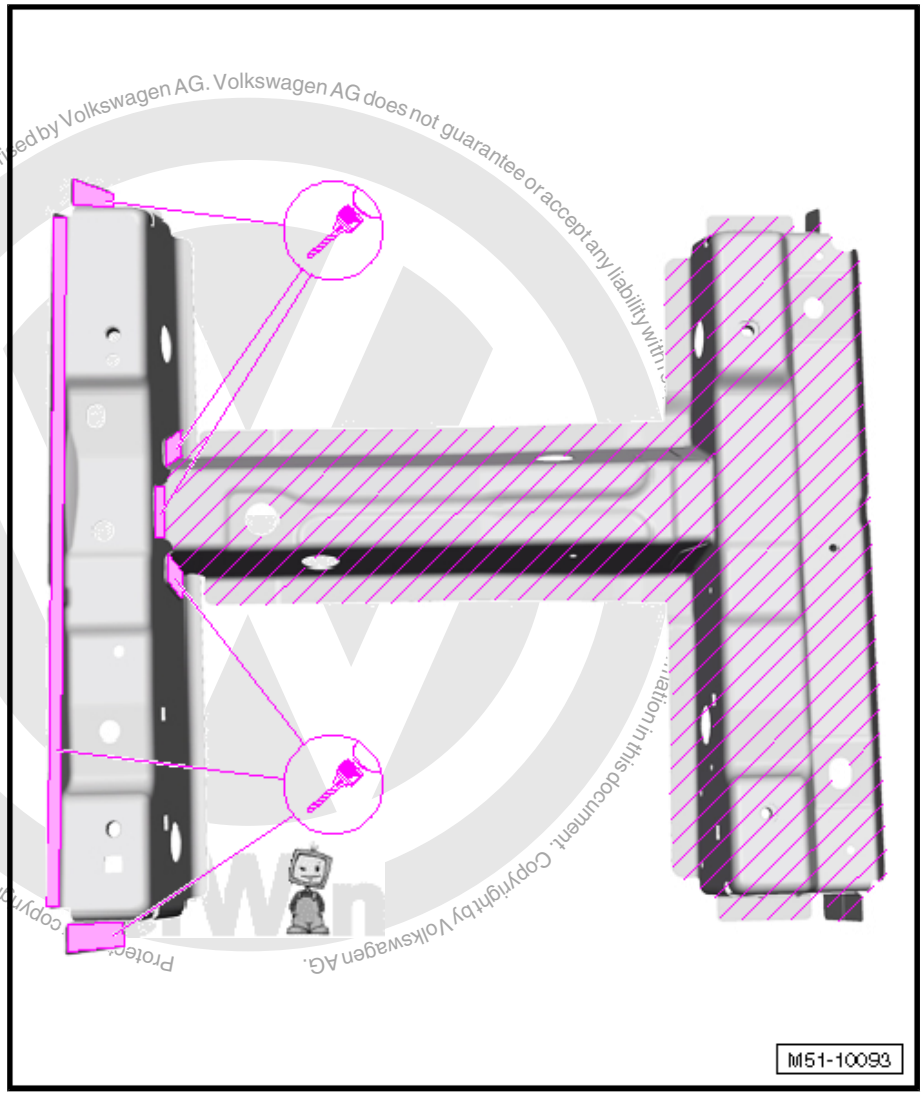
Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "18.1 Tools", page 241 .

18.3.1 Preparing New Parts

New Part

- Seat mount



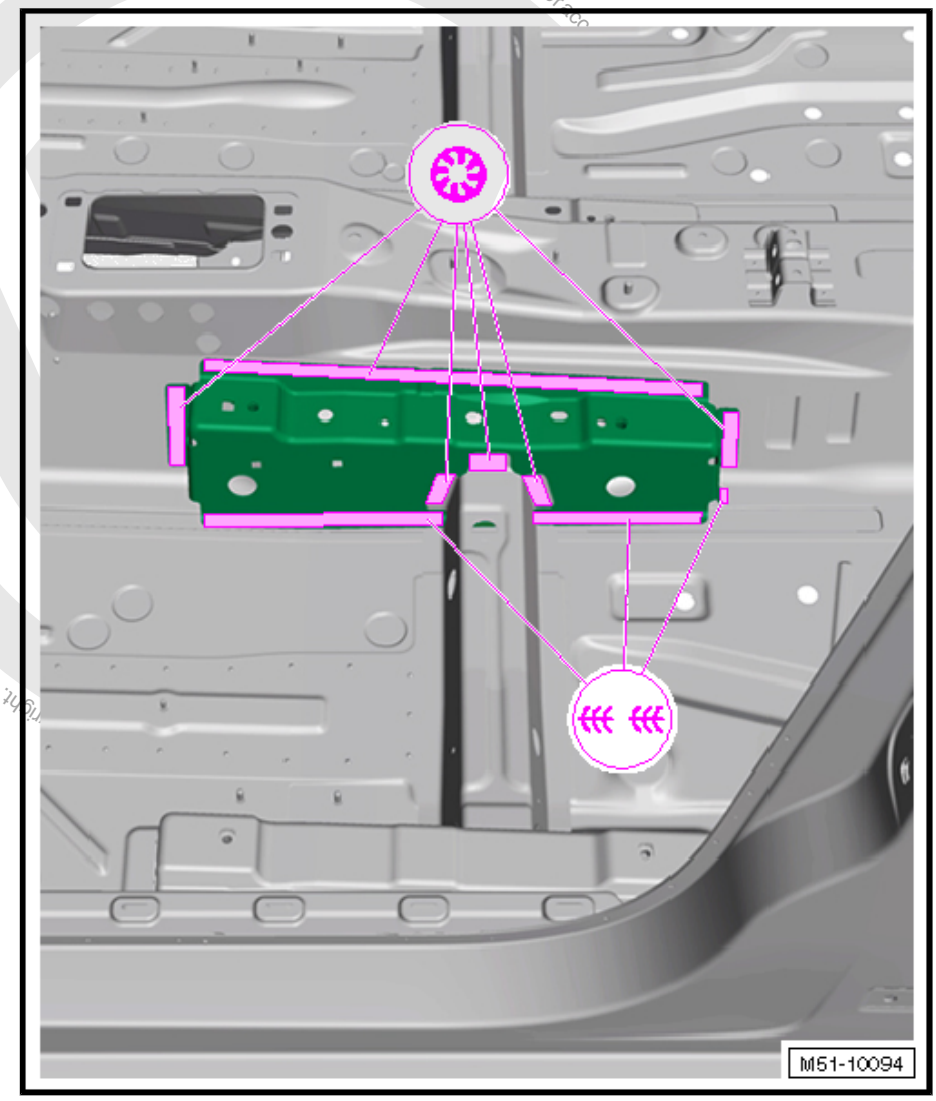
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– Separate the inner seat crossmember mount from the new part.
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

18.3.2 Welding

– Align and secure new parts.
– Check the fit on the center seat crossmember and the seat.

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– Weld the seat crossmember mount to the center tunnel and the center seat crossmember with a gas-shielded arc plug weld seam.
– Weld the inner seat crossmember mount to the floor panel with a gas-shielded arc continuous weld seam (staggered).

RO: 51 87 55 50

19 Center Seat Crossmember, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Outer seat crossmember mounting already removed, refer to ⇒ “17 Outer Seat Crossmember Mount, Replacing”, page 235 .

19.1 Tools

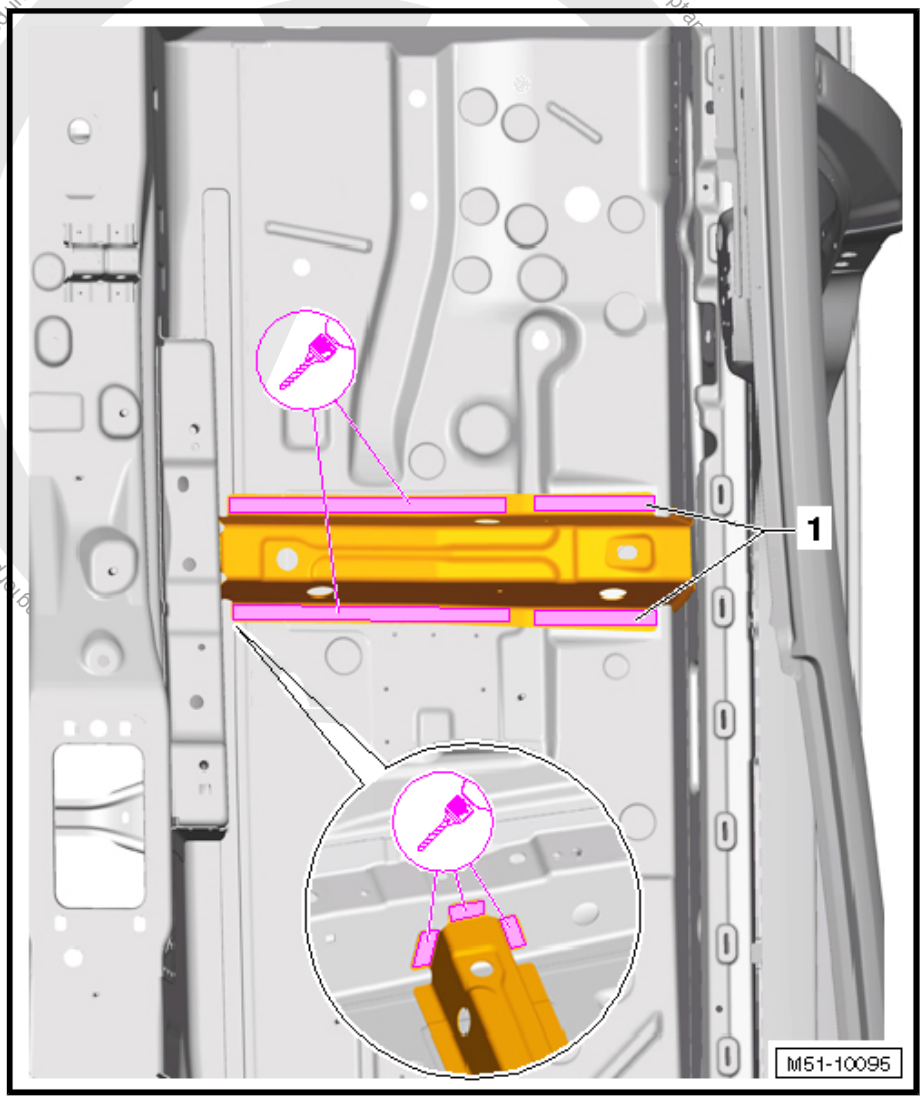
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

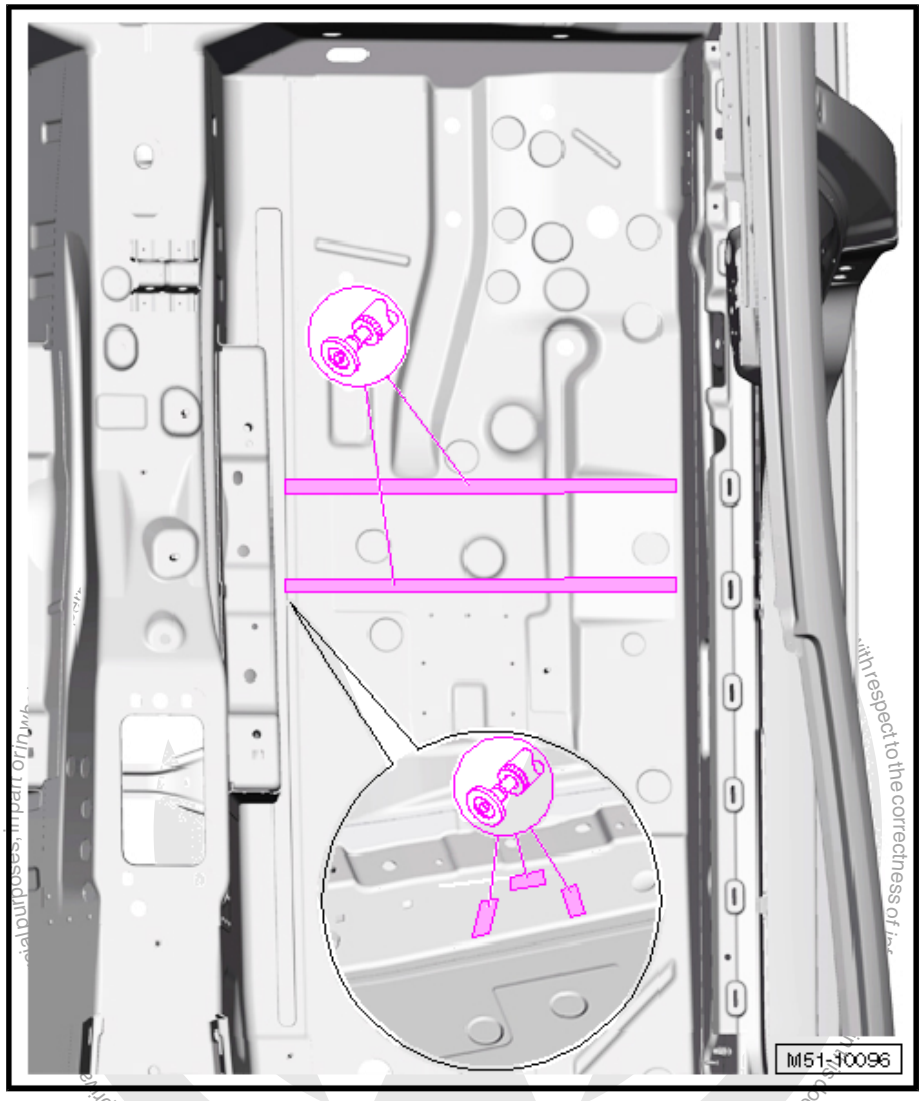
19.2 Removing

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– Open the original joint for the inner seat crossmember mount and for the floor panel.
– Remove the bonding -1- from the floor panel.



– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.

19.3 Installing

Note

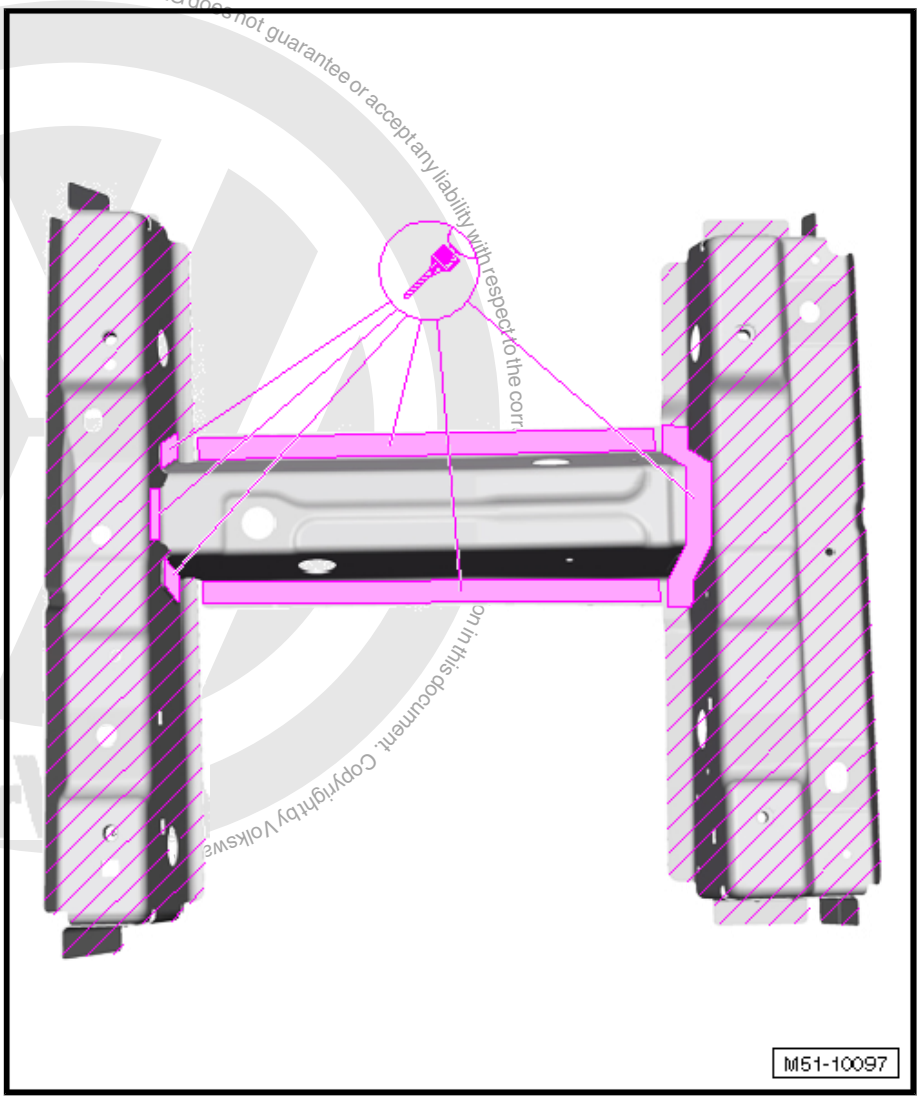
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "19.1 Tools", page 246 .

19.3.1 Preparing New Parts

New Part

- Seat mount
- 2K Body Adhesive - D 180 KD3 A2-

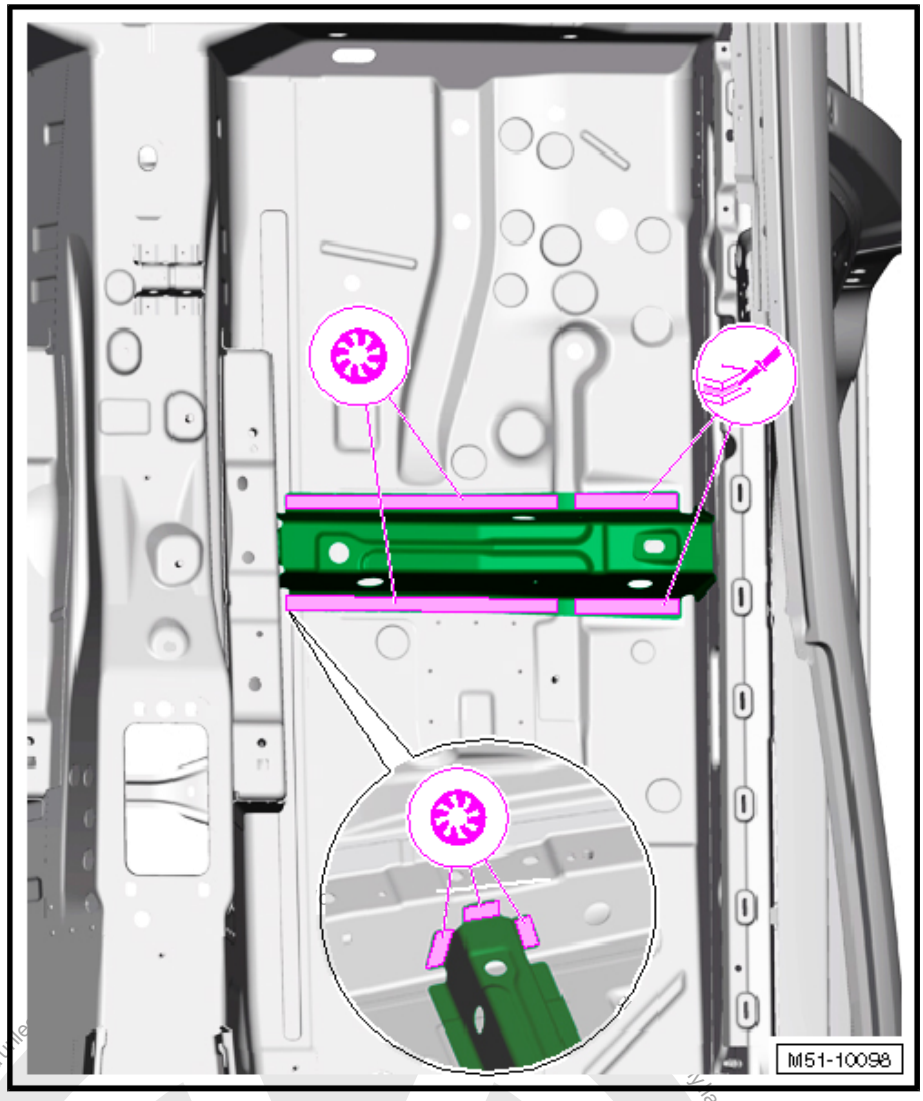
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– Separate the center seat crossmember from the new part.
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

19.3.2 Welding

– Align and secure new parts.
– Make sure the outer seat crossmember mount and the seat fit correctly.



– Apply 2K Body Adhesive - D 180 KD3 A2- in the areas in the areas where it was bonded during production.
– Weld the center seat crossmember to the inner seat cross-member mount and to the floor panel with a gas-shielded arc plug weld seam.
– Install mount for outer seat cross member, refer to ⇒ “17.3 Installing”, page 238 .

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20 Special Tools

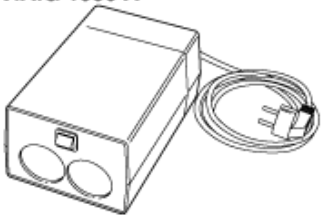
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Special tools and workshop equipment required

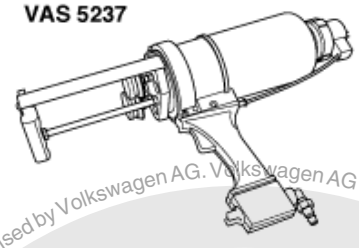
V.A.G 1761/1



V.A.G 1939 A

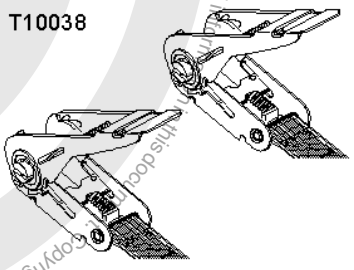


VAS 5237



W51-0003

T10038



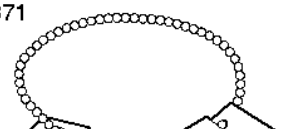
W00-1005

V.A.G 1344



W00-0530

3371



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- Pneumatic Cartridge Gun - VAG1761/1-
- Cartridge Heater - VAG1939A-
- Double Cartridge Gun - VAS5237-
- Tensioning Strap - T10038-
- Double Suction Lifter - VAG1344-
- Gauge - Gap Adjustment - 3371-

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53 – Body Rear

RO: 53 05 55 00

1 Cross Panel, Replacing

Includes: Lock Carrier

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

Note

It is necessary to remove the tail lamp assembly mount on one side in order to remove the rear cross panel.

- Tail lamp mount already removed, refer to ⇒ “3 Tail Lamp Mount, Replacing”, page 264 .

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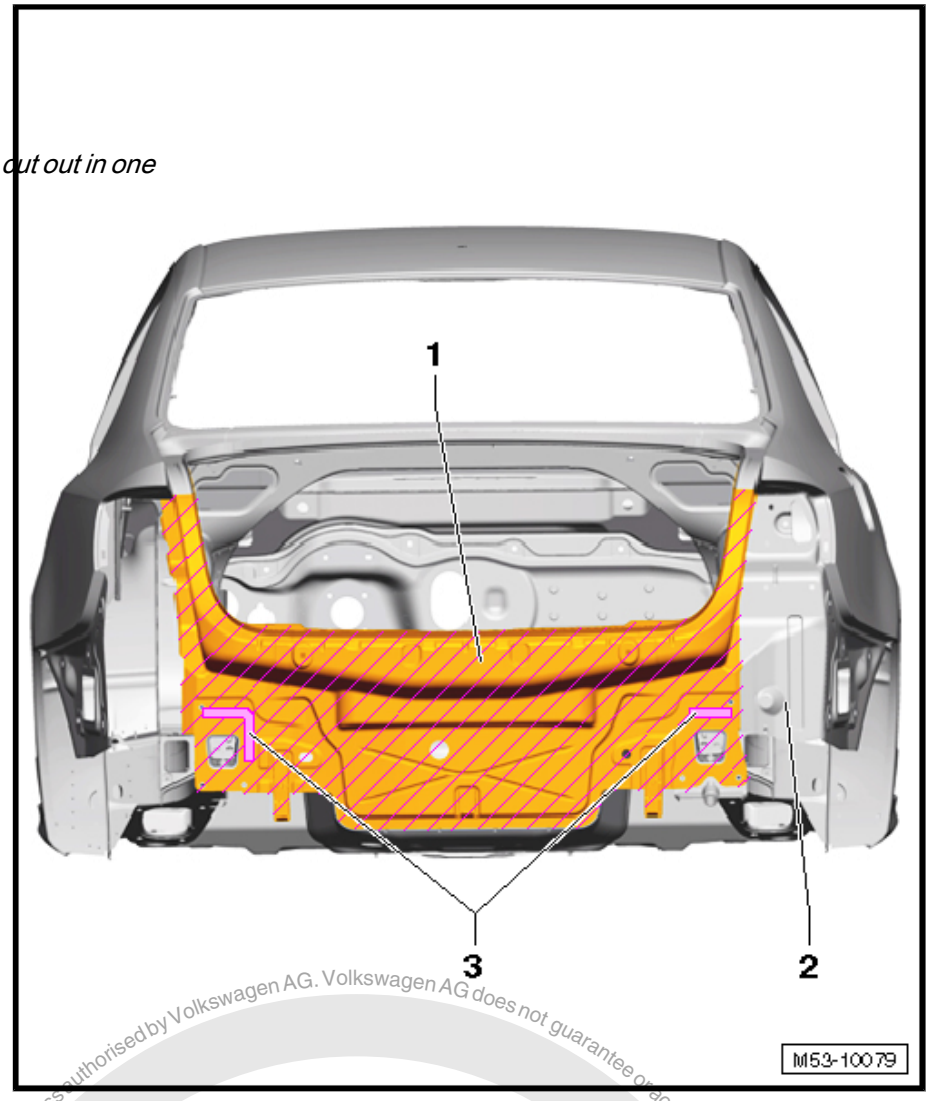
1 - Cross Panel With Lock Carrier

Note

Rear cross panel -1- is cut out in one piece.

2 - Right Tail Lamp Mount

3 - Bonded Area



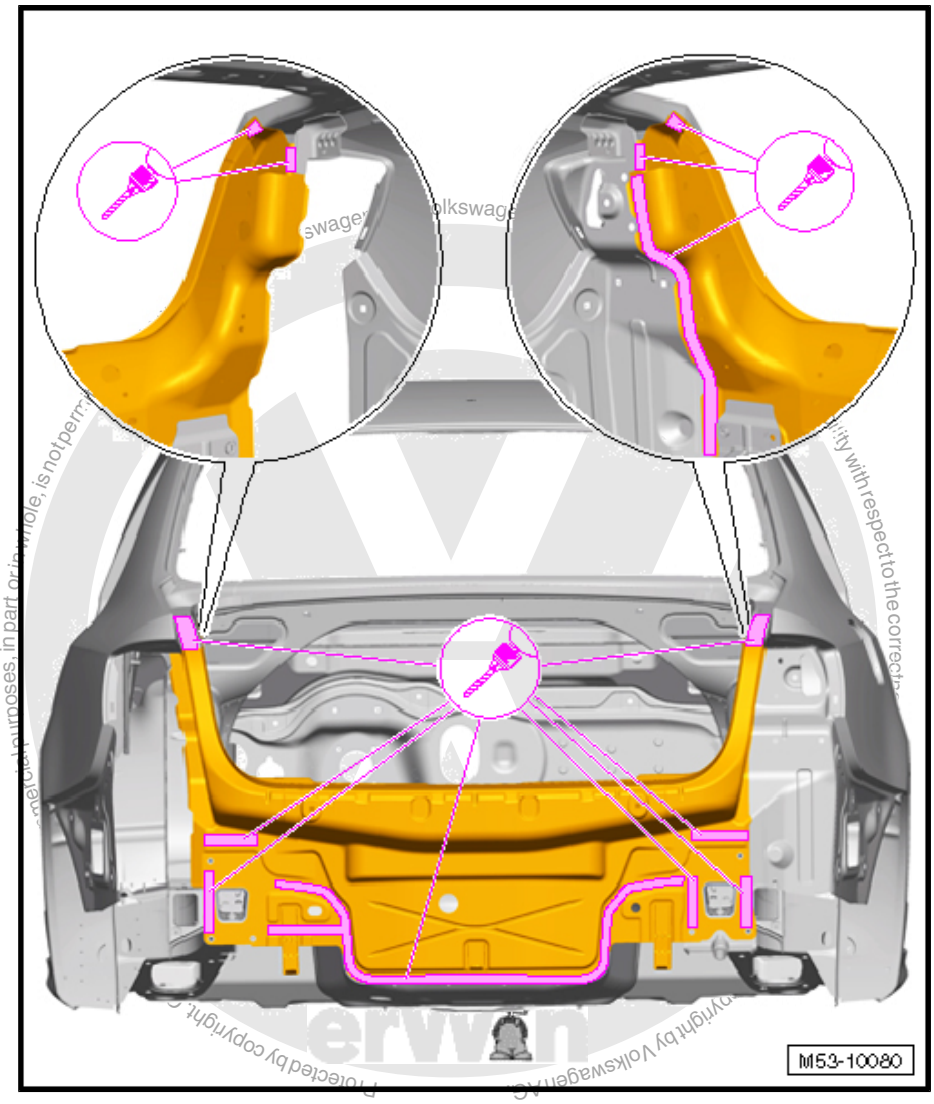
1.1 Tools

Note

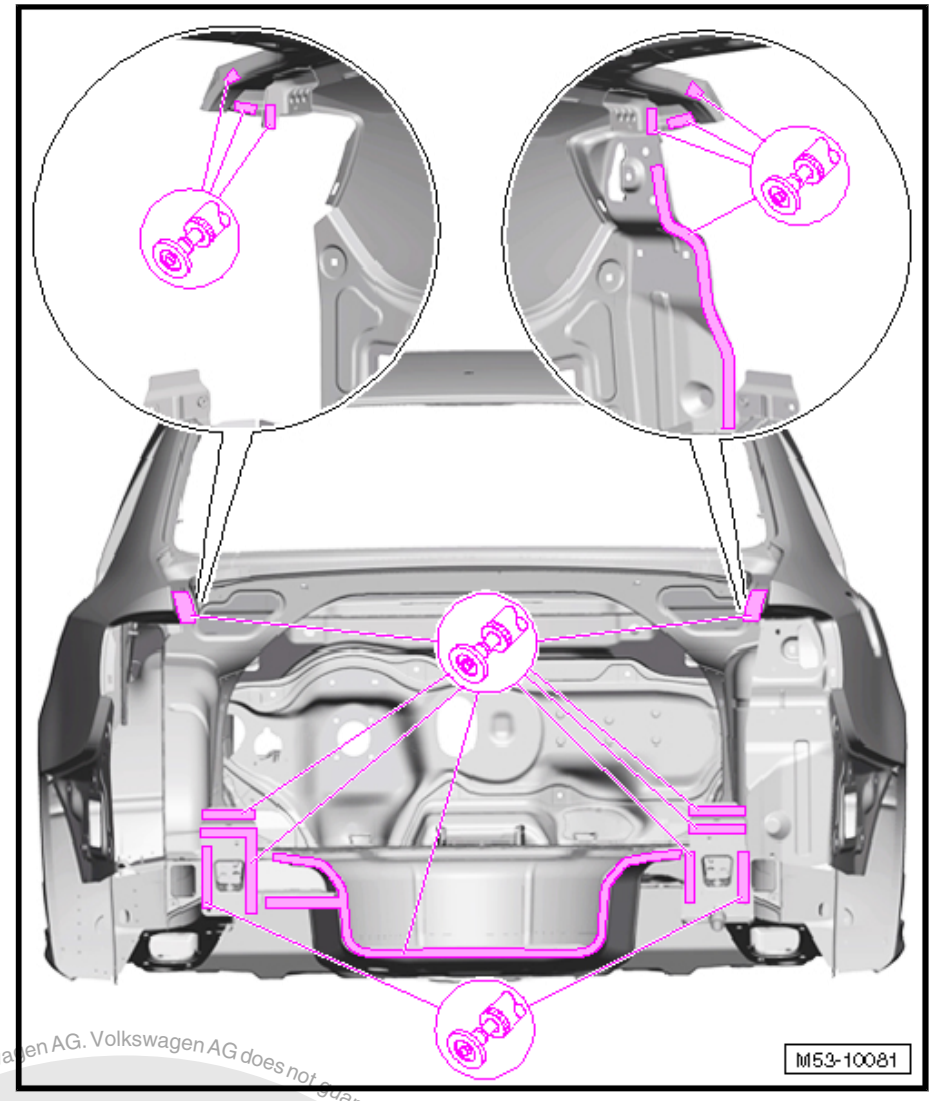
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

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1.2 Removing



– Separate the original joint.



– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.
– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
– Lightly sand the adhesive surfaces in the connection.

1.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒"1.1 Tools", page 255 .

1.3.1 Preparing New Parts

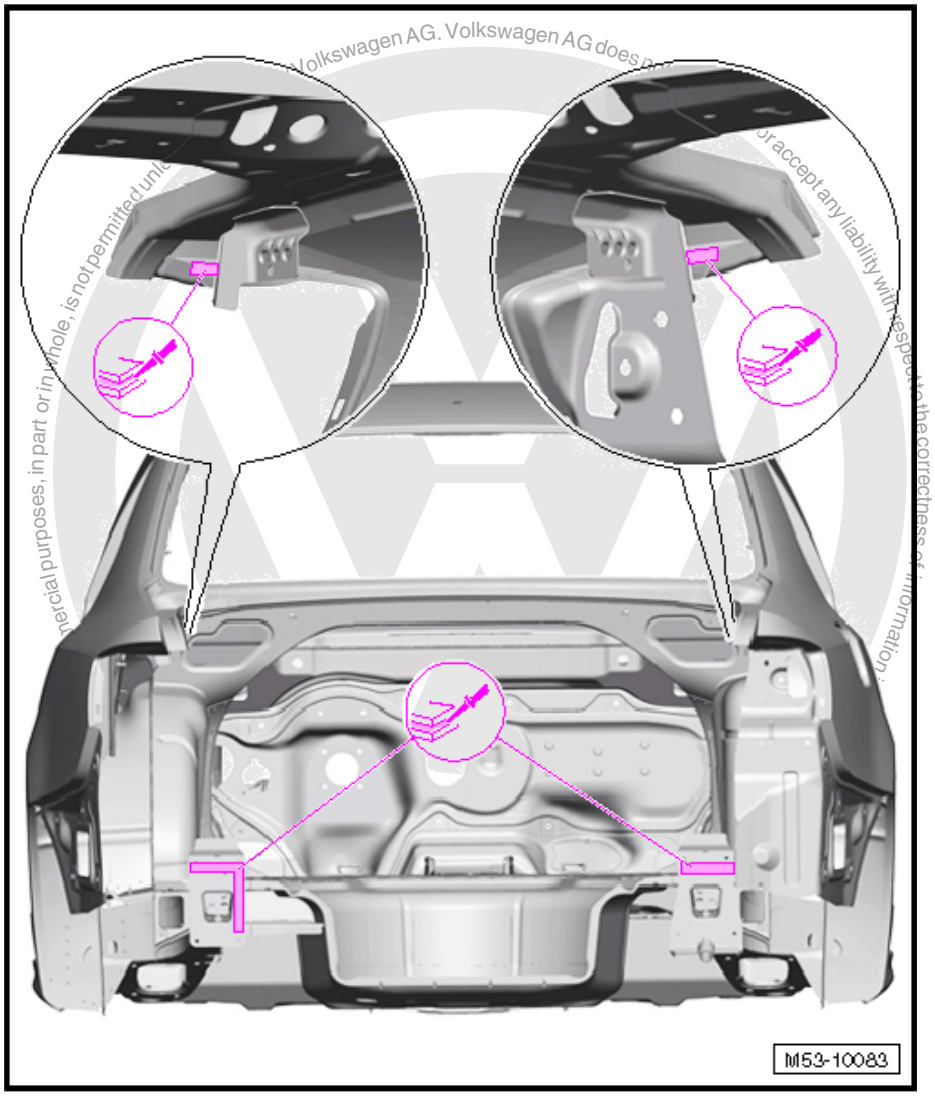
- Cross panel
- 2K Body Adhesive - D 180 KD3 A2-

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1.3.2 Welding

Note

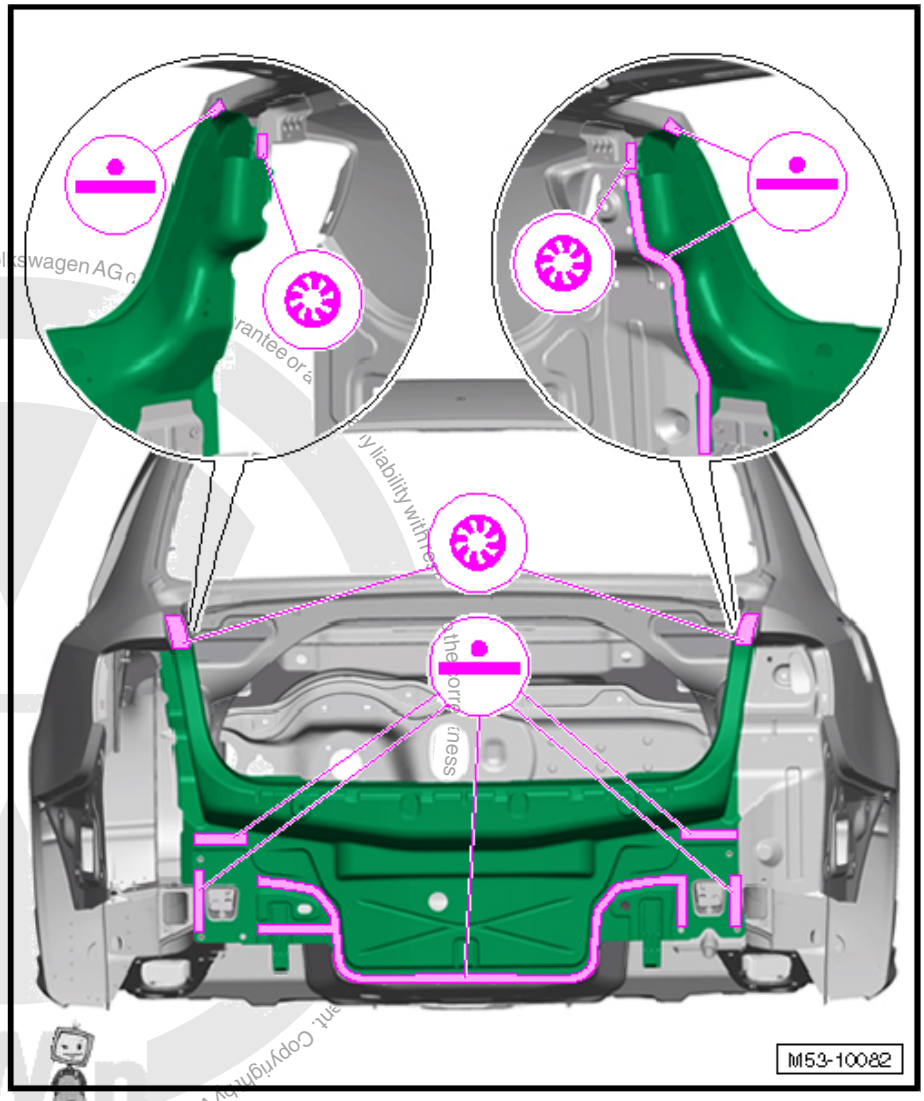
- *New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.*
- *Align and secure new parts with vehicle standing on wheels or alignment bracket set.*



– Apply 2K Body Adhesive - D 180 KD3 A2- in the areas in the areas where it was bonded during production.

– Align and secure the rear cross panel.

– Check fit with attachments.



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– Weld in rear cross panel with a straight-line spot weld seam and a gas-shielded arc plug weld seam.

– Install the tail lamp mount, refer to ⇒ “3.3 Installing”, page 266 .

RO: 53 09 55 00

2 Lock Carrier, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

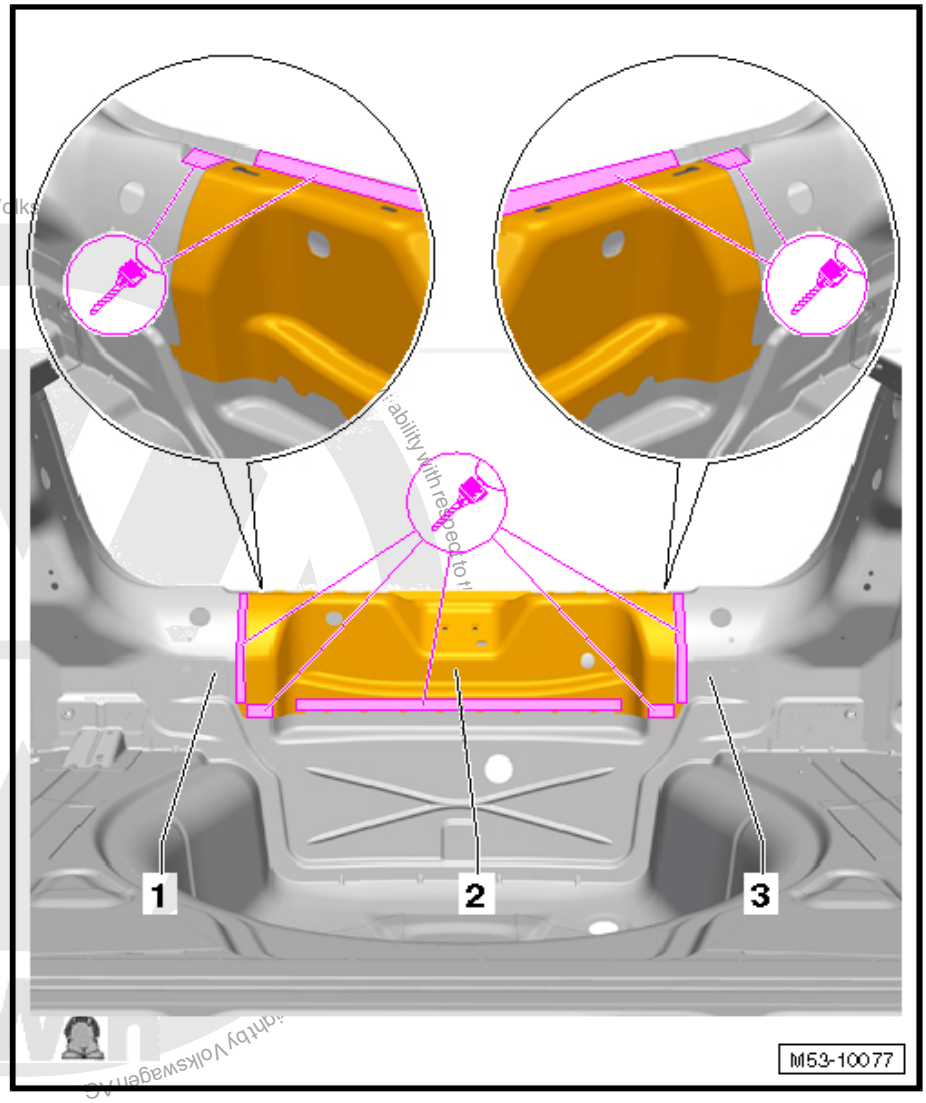
2.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

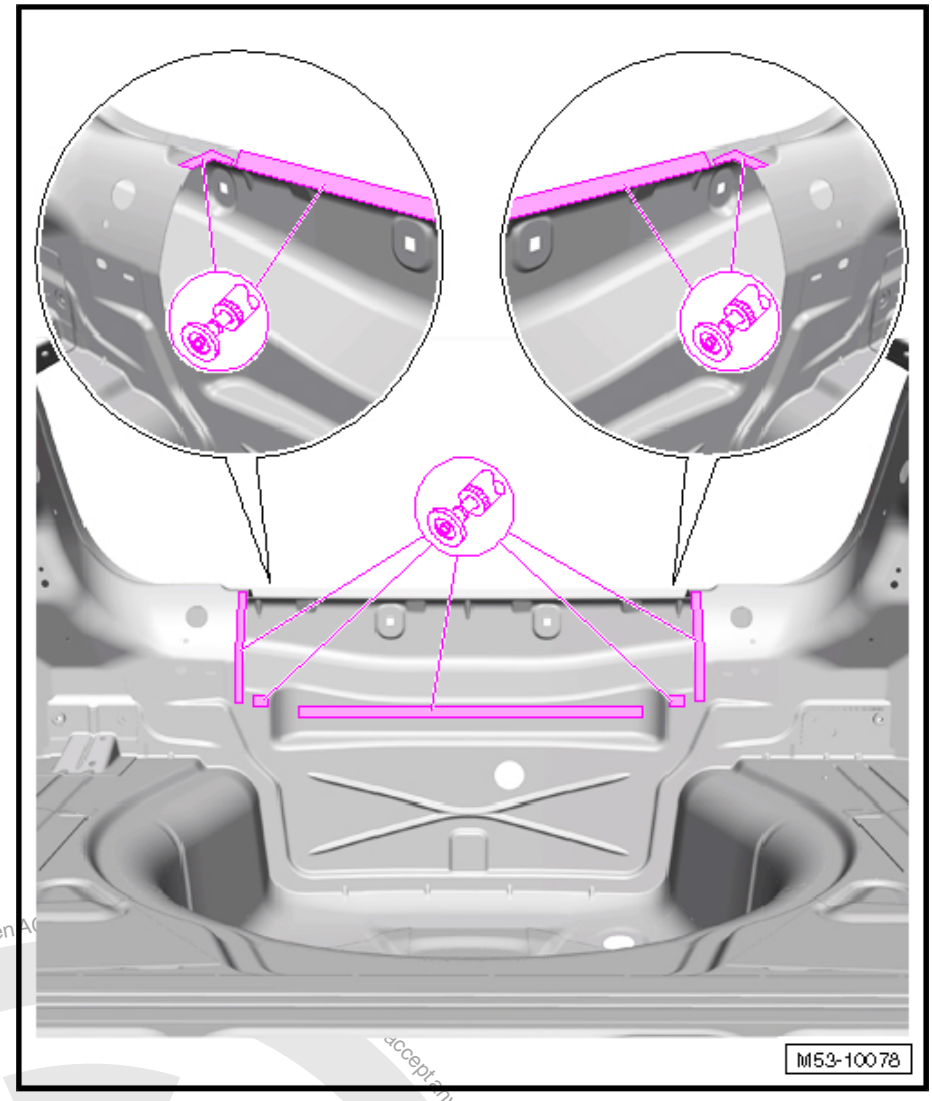
2.2 Removing

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– Separate the original joint.
– Gently bent the lower corners from the connecting pieces -1 and 3- and remove the lock carrier -2-.



– Remove residual material.

2.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "2.1 Tools", page 260 .

2.3.1 Welding

New Part

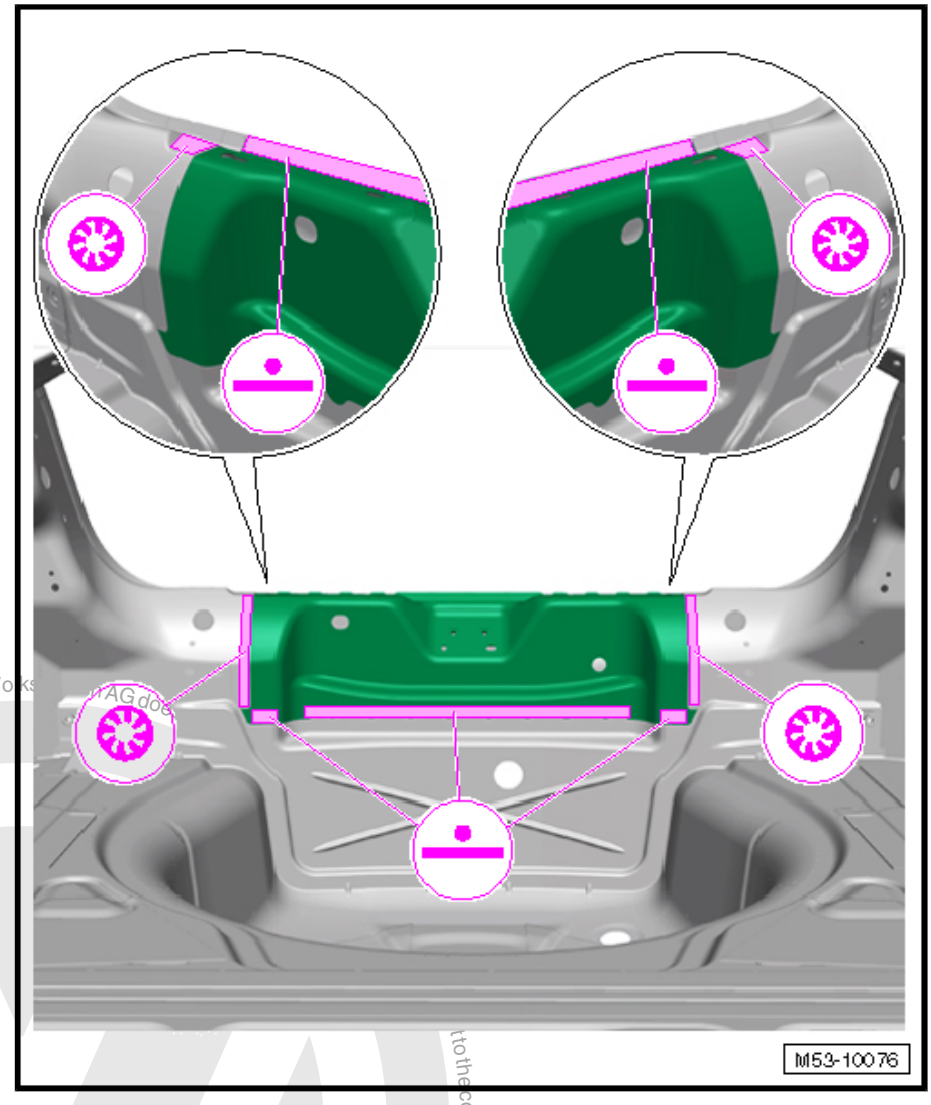
♦ Lock Carrier

– Fit and secure the lock carrier.

– Check fit with attachments.

– Check closing function of lid.

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– Weld in lock carrier, Gas-shielded arc plug weld seam and straight-line spot weld seam.

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RO: 53 10 55 50

3 Tail Lamp Mount, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Tail Lamp Mount

2 - Cross Panel

3 - Side Panel



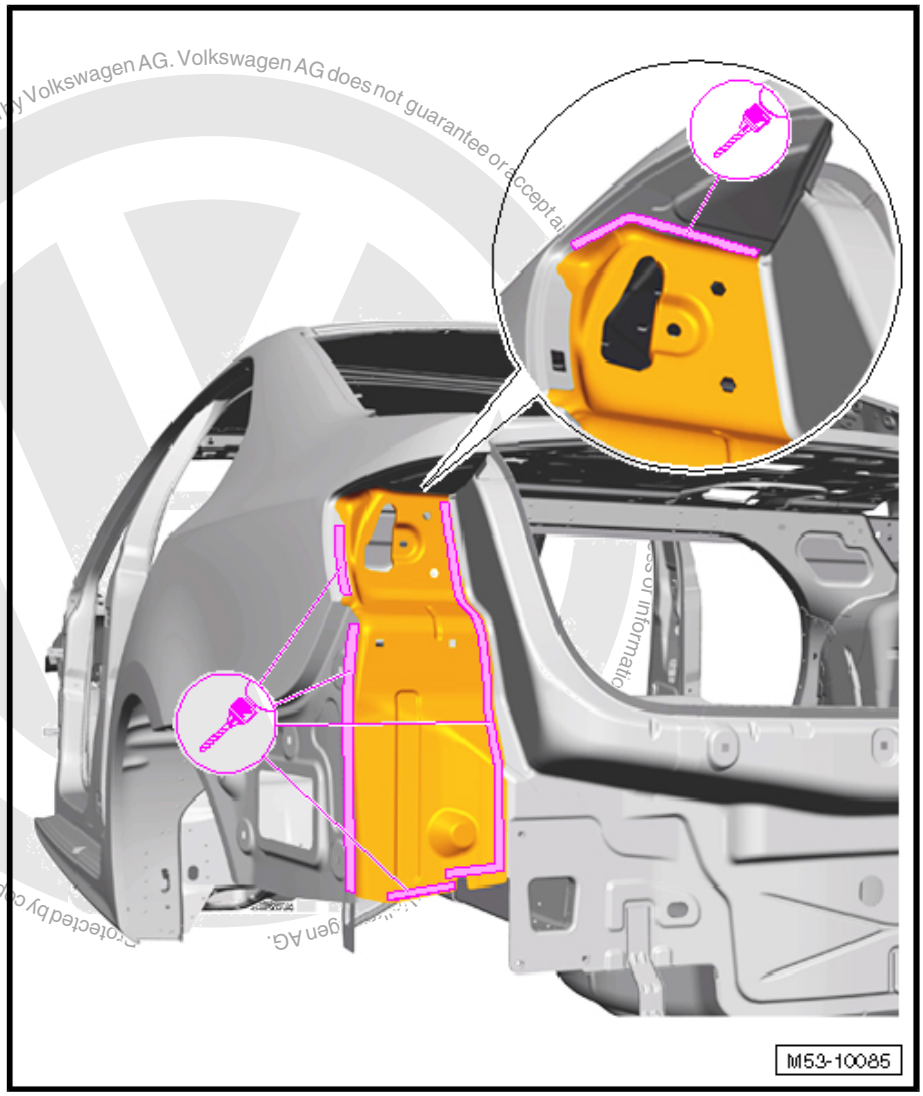
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3.1 Tools

Note

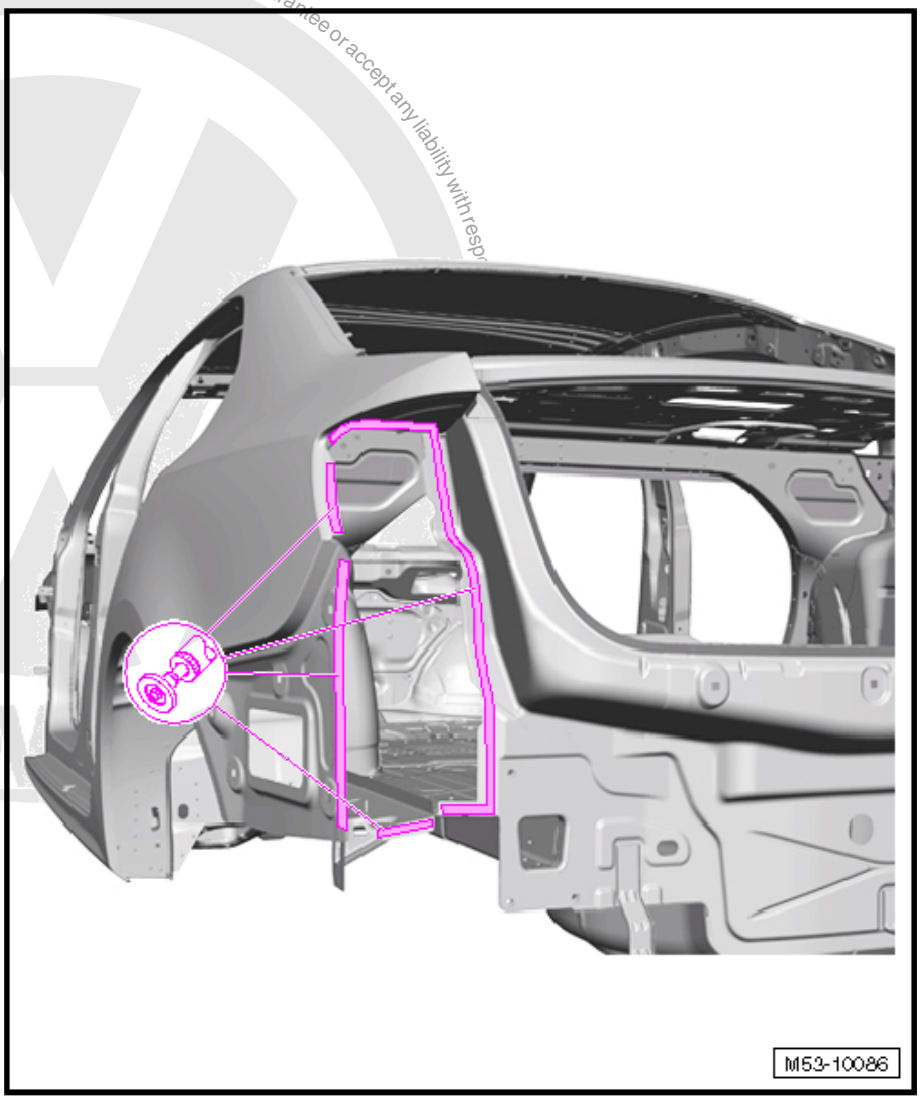
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

3.2 Removing



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– Remove residual material.

3.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "3.1 Tools", page 265 .

3.3.1 Preparing New Parts

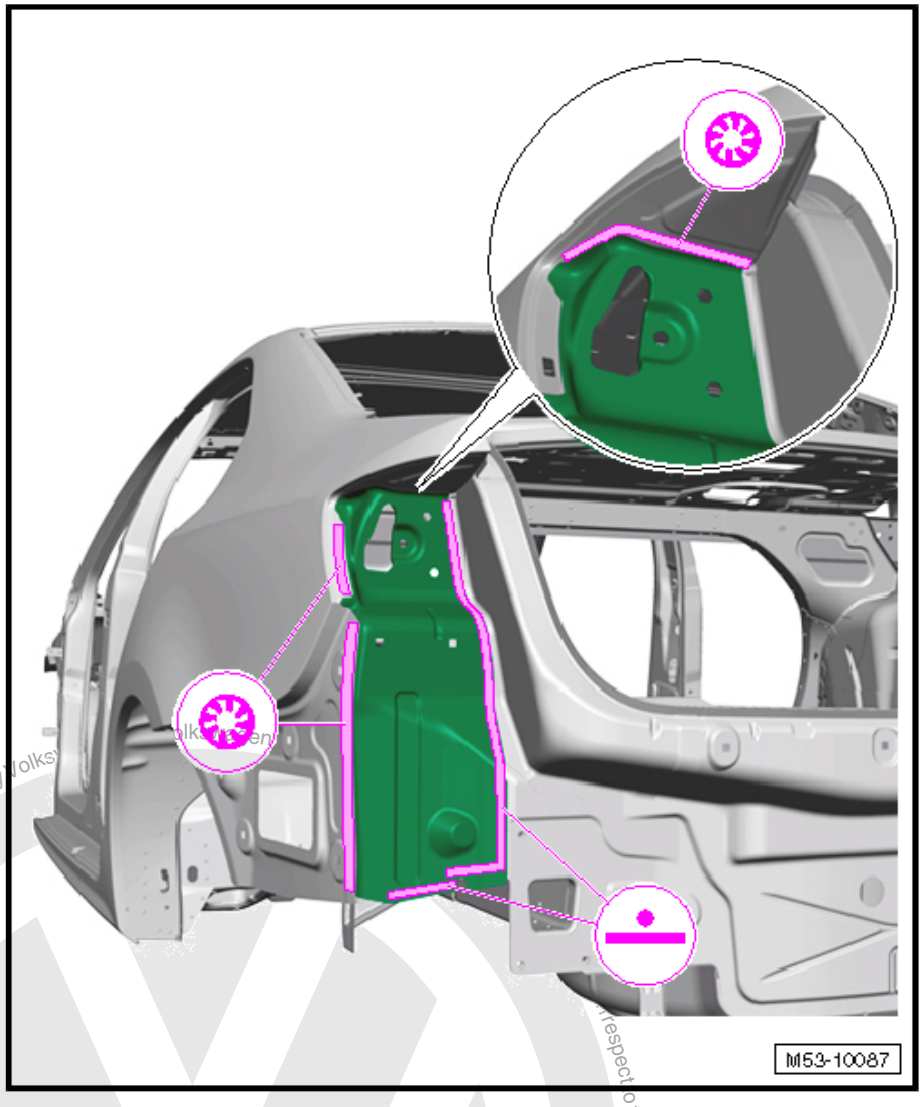
New Part

♦ Tail Lamp Assembly Mount

3.3.2 Welding

– Align the new part and secure it in place.

– Check fit with attachments.



– Weld the tail lamp assembly mount with a gas-shielded arc plug weld seam and a straight-line spot weld seam.

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RO: 53 17 55 50

4 Tail Lamp Reinforcement, Replacing, Hybrid Vehicles

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Side panel already removed, refer to ⇒ “11 Side Panel, Replacing Partial Section”, page 308
- Tail lamp mount already removed, refer to ⇒ “3 Tail Lamp Mount, Replacing”, page 264 .

1 - C-Pillar Reinforcement

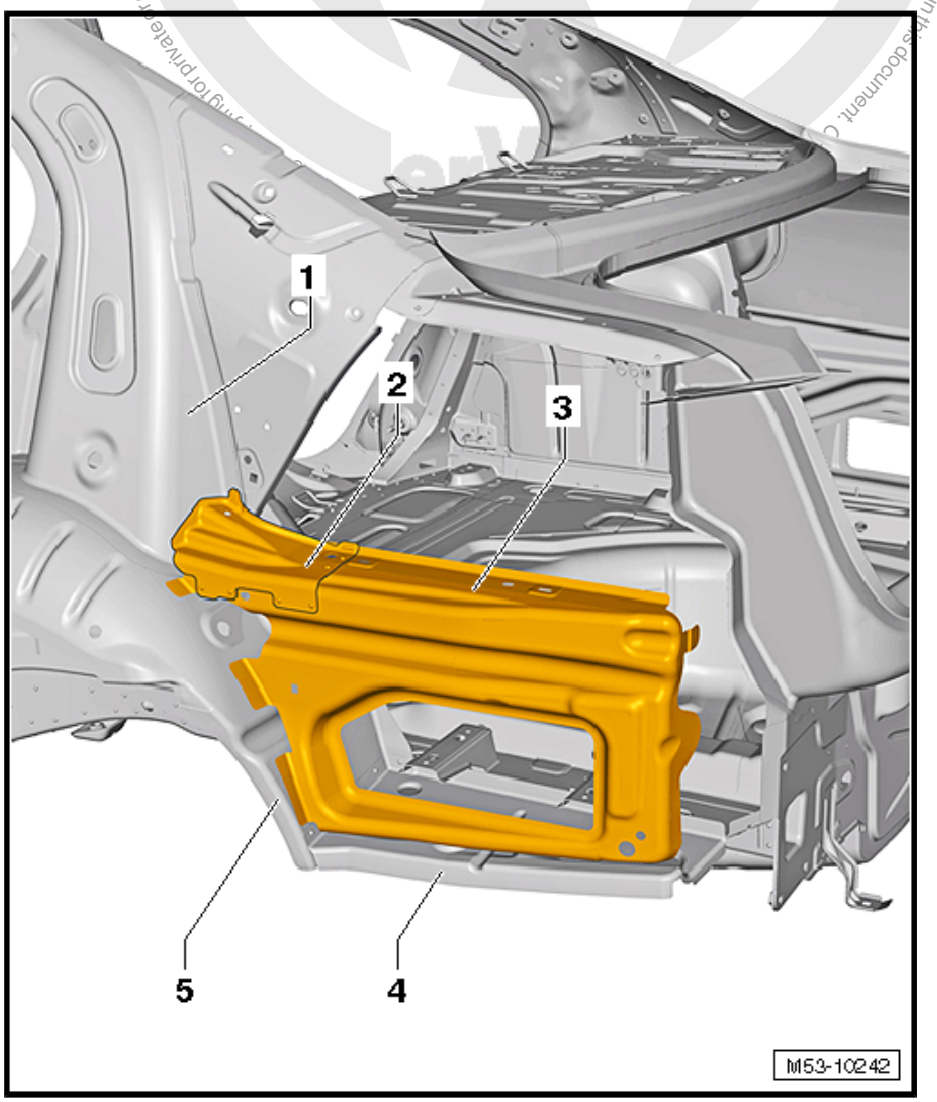
2 - Fillet Plate

Is also removed.

3 - Tail Lamp Reinforcement

4 - Connecting Piece

5 - Outer Wheel Housing Liner

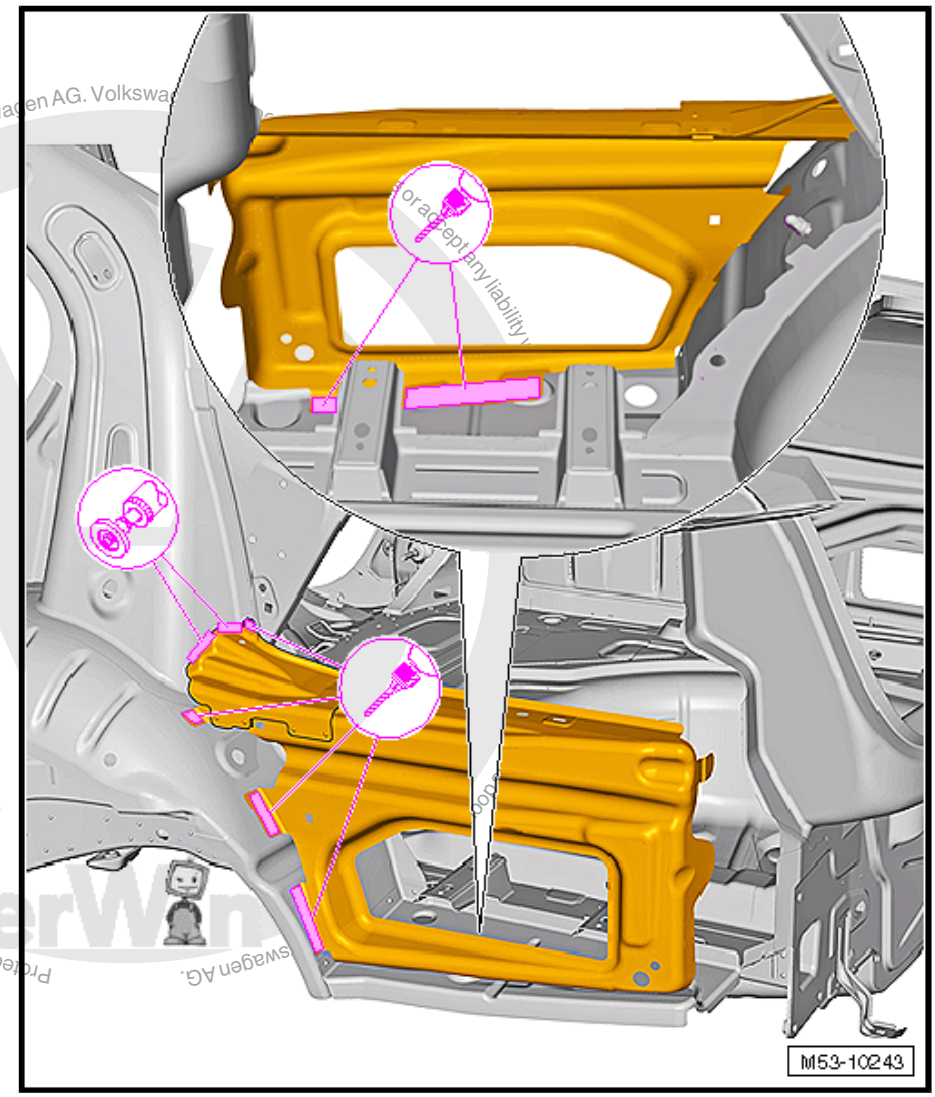


4.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

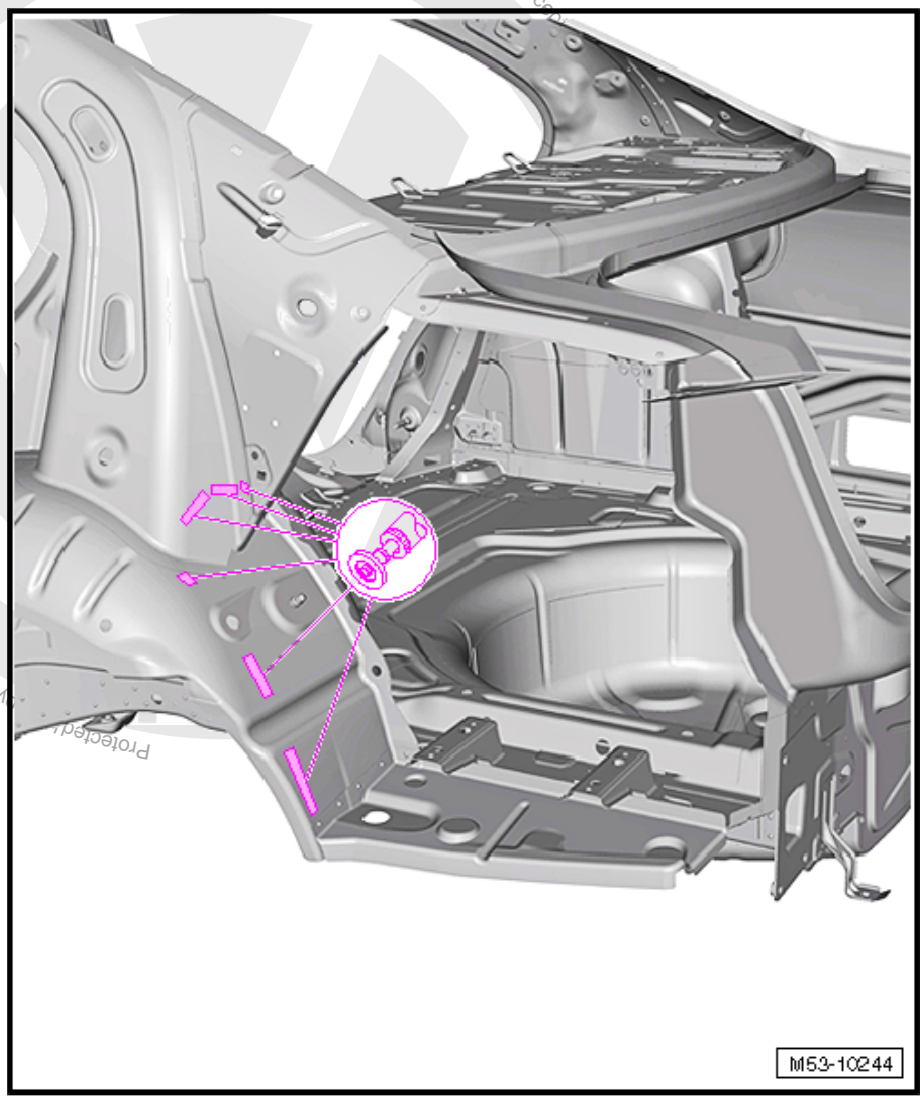
4.2 Removing



– Cut the original joint on the C-pillar reinforcement, outer wheel housing liner and to the end plate.

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– Remove residual material.

4.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "3.1 Tools", page 265 .

4.3.1 Preparing New Parts

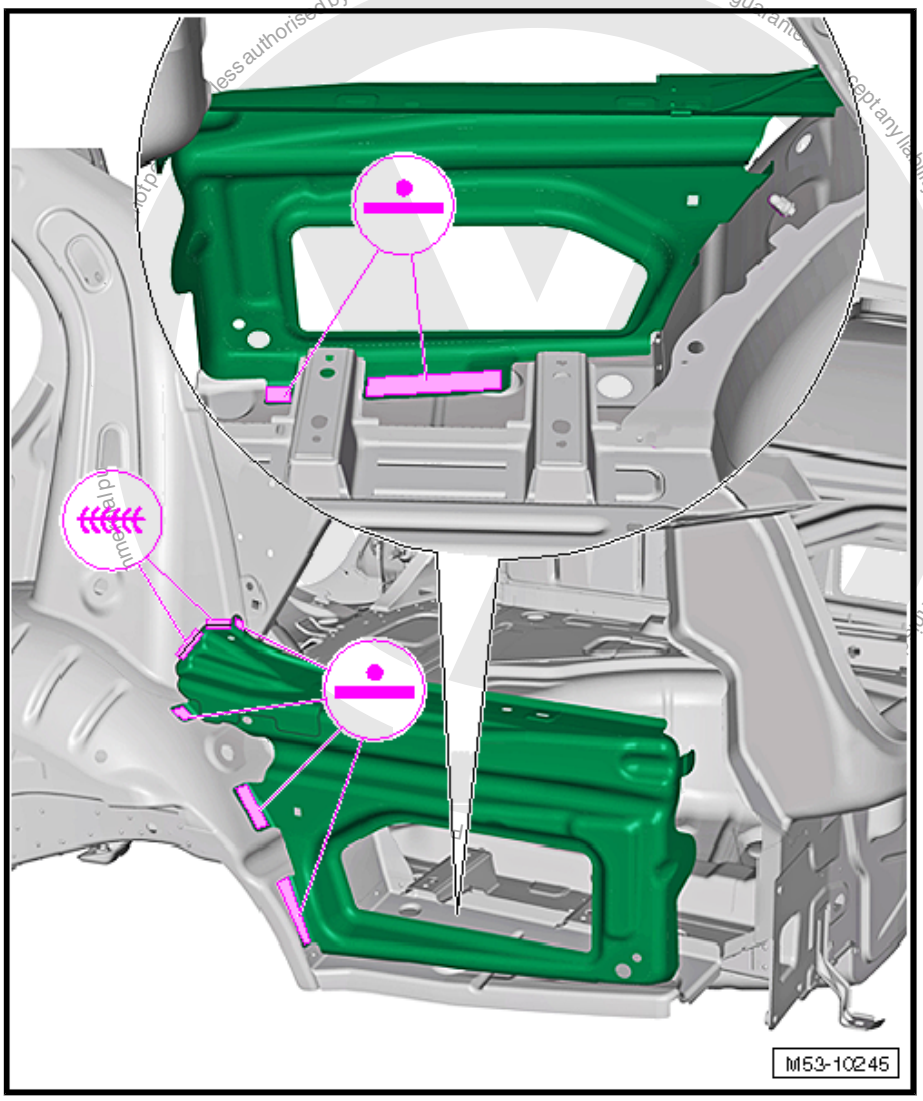
New Part

♦ Tail Lamp Reinforcement

4.3.2 Welding

– Align the new part and secure it in place.

– Check fit with attachments.



– Weld the tail lamp reinforcement, gas-shielded arc continuous weld seam and straight-line spot weld seam.

RO: 53 24 55 50

5 Luggage Compartment Floor, Replacing

Includes: Bumper Bracket Reinforcement

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Cross panel already removed, refer to ⇒ “1 Cross Panel, Replacing”, page 254 .
- Hybrid vehicles: rear longitudinal member reinforcement already removed, refer to ⇒ “9 Rear Longitudinal Member Reinforcement, Replacing, Hybrid Vehicles”, page 297 .
- Hybrid vehicles: battery mount already removed, refer to ⇒ “10 Rear Battery Mount, Replacing, Hybrid Vehicles”, page 303 .

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1 - Luggage Compartment Floor

2 - Bonded Area

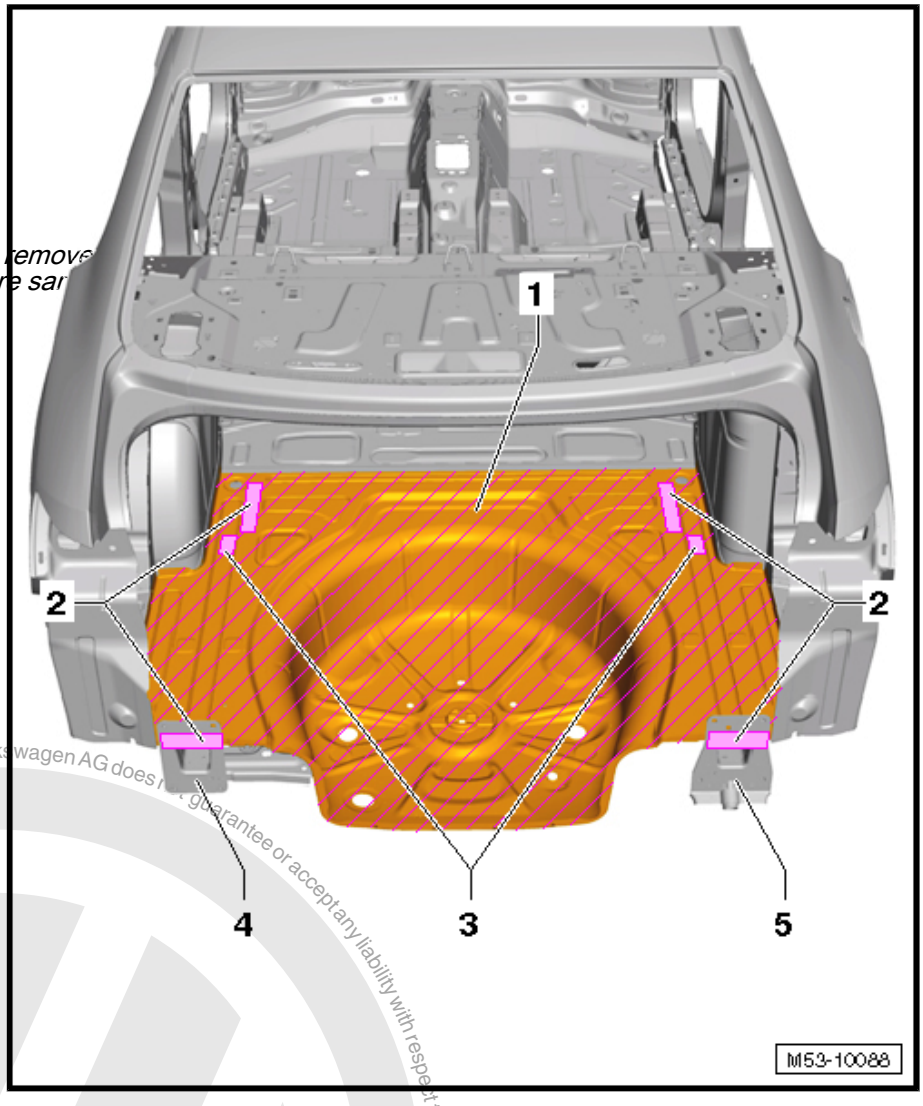
3 - Molded Foam Part

Note

*Foam residue must be remove
much as possible before sar
work.*

4 - Left Longitudinal Member

5 - Right Longitudinal Member



5.1 Tools

Note

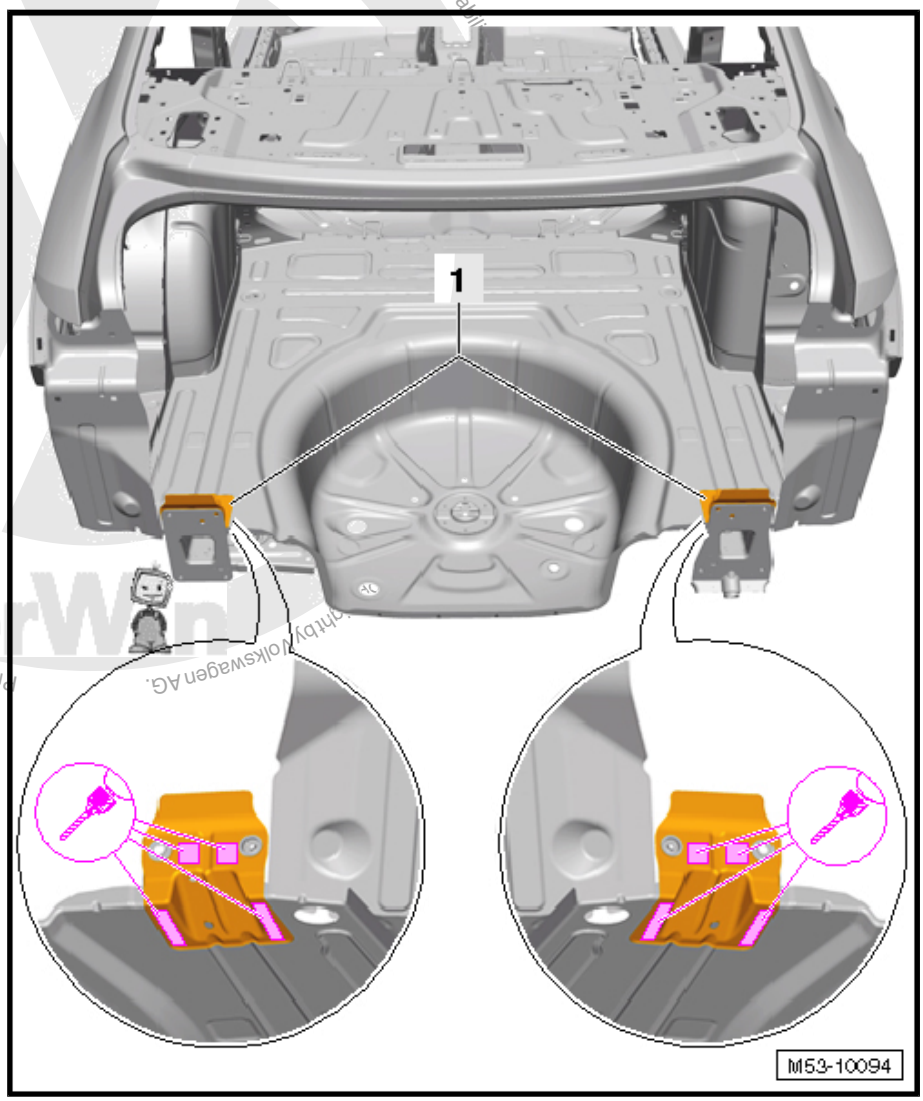
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to , Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

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5.2 Removing

Note

North America vehicles have a bumper carrier reinforcement. The reinforcement must be removed in order to replace the luggage compartment floor panel.

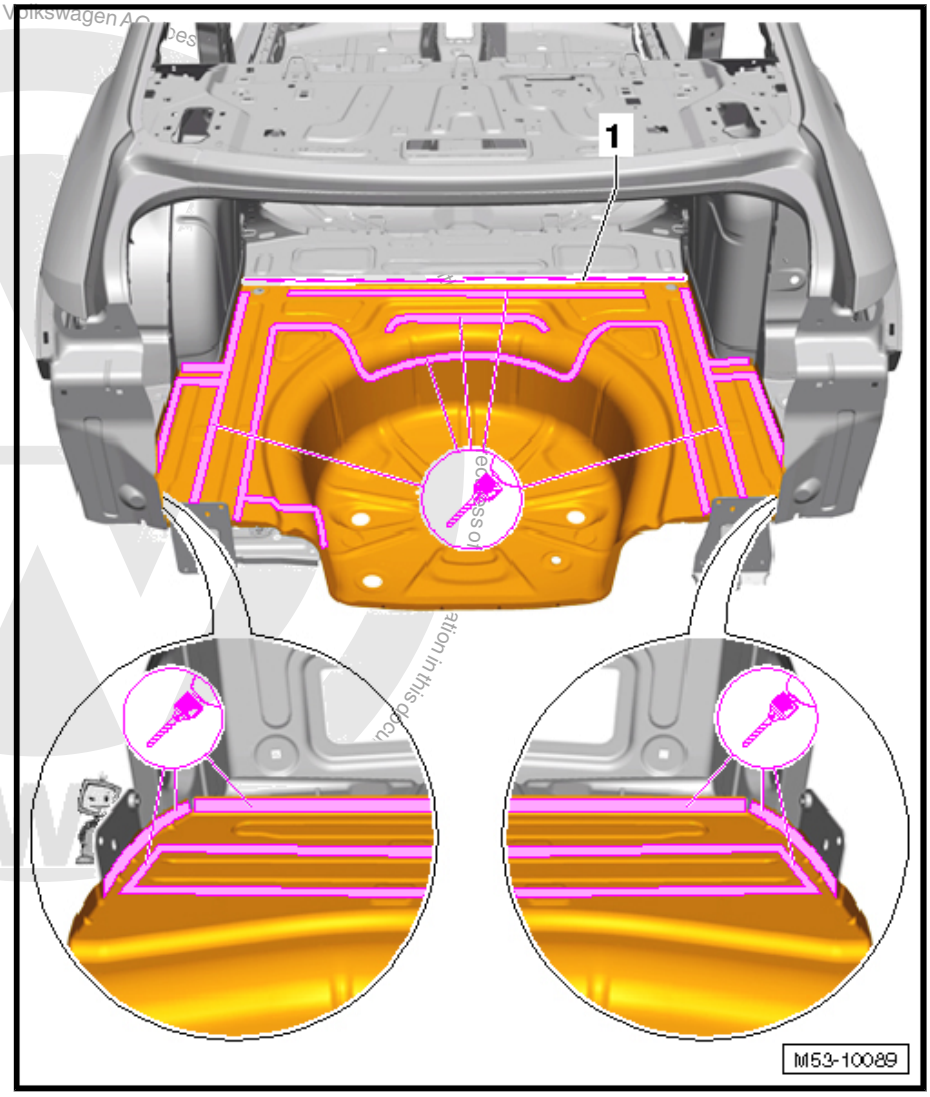


– Separate the original joint from the bumper carrier reinforcement.

Note

- *When marking the separating cut -1-, allow 10 mm excess material for overlapping with the new part.*
- *Be sure not to damage the metal panels behind it when making the separating cut.*
- *Foam residue must be removed as much as possible before sanding work.*

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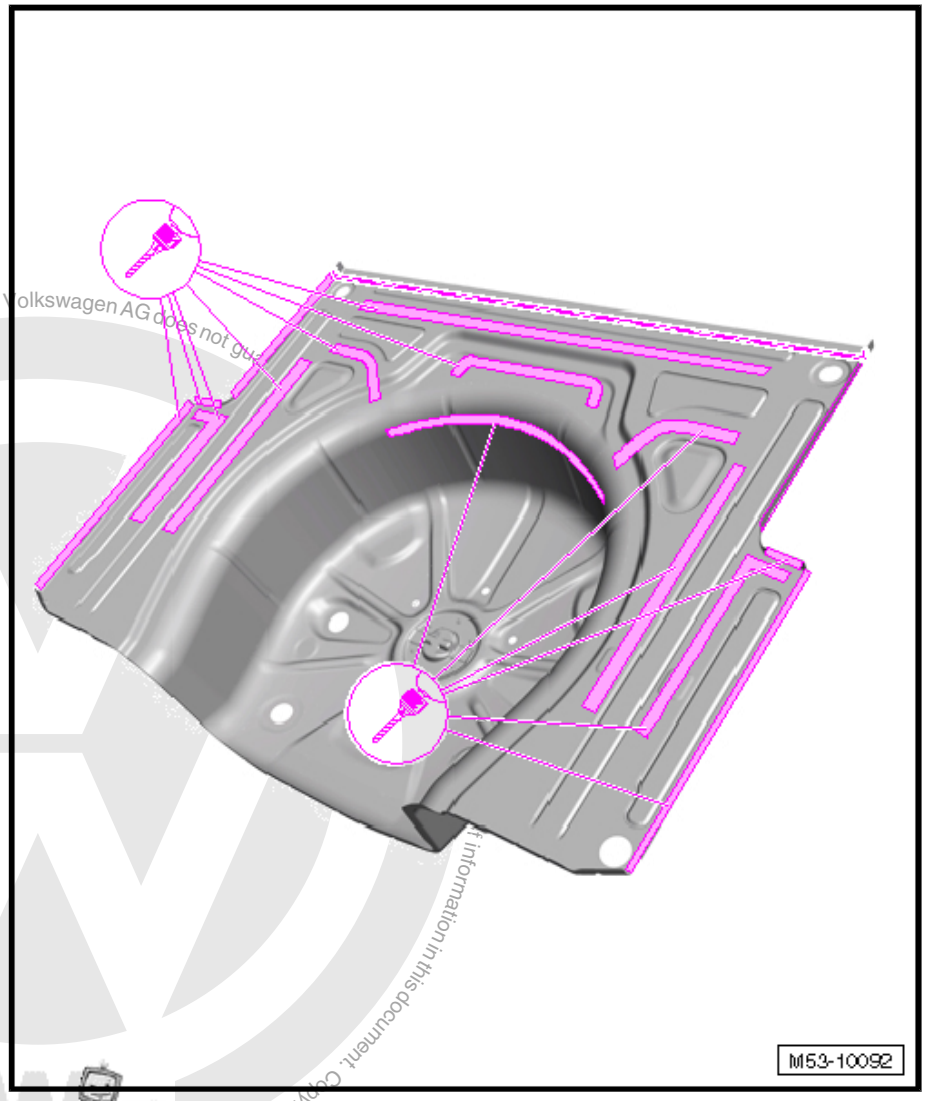
– Separate the original joint.
– Perform a separating cut -1- as shown.

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♦ 2K Body Adhesive - D 180 KD3 A2-

Note

When marking the separating cut -1-, allow 10 mm excess material for overlapping.



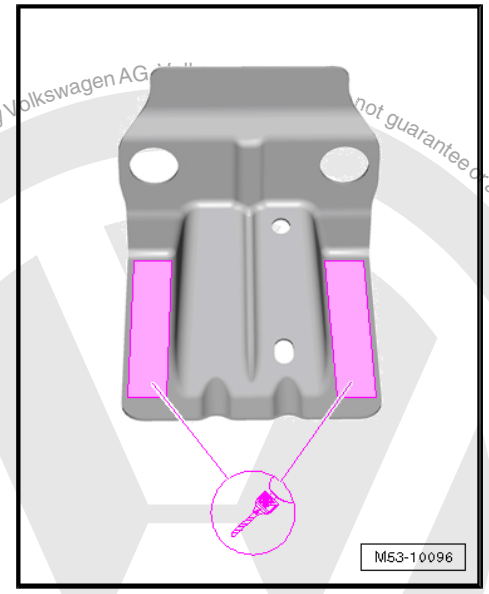
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– Transfer separating cuts onto new part and cut to shape.
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

New Part for Only NAR Vehicles

♦ Bumper carrier reinforcement

– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.



5.3.2 Molded Foam Parts

Observe Repair Notes.

Molded foam part, refer to ⇒ General Information; Body Repairs, Body Collision Repair ; General Information, Molded Foam Components

Position of molded foam parts, refer to
⇒ “5 Molded Foam Parts”, page 7 .

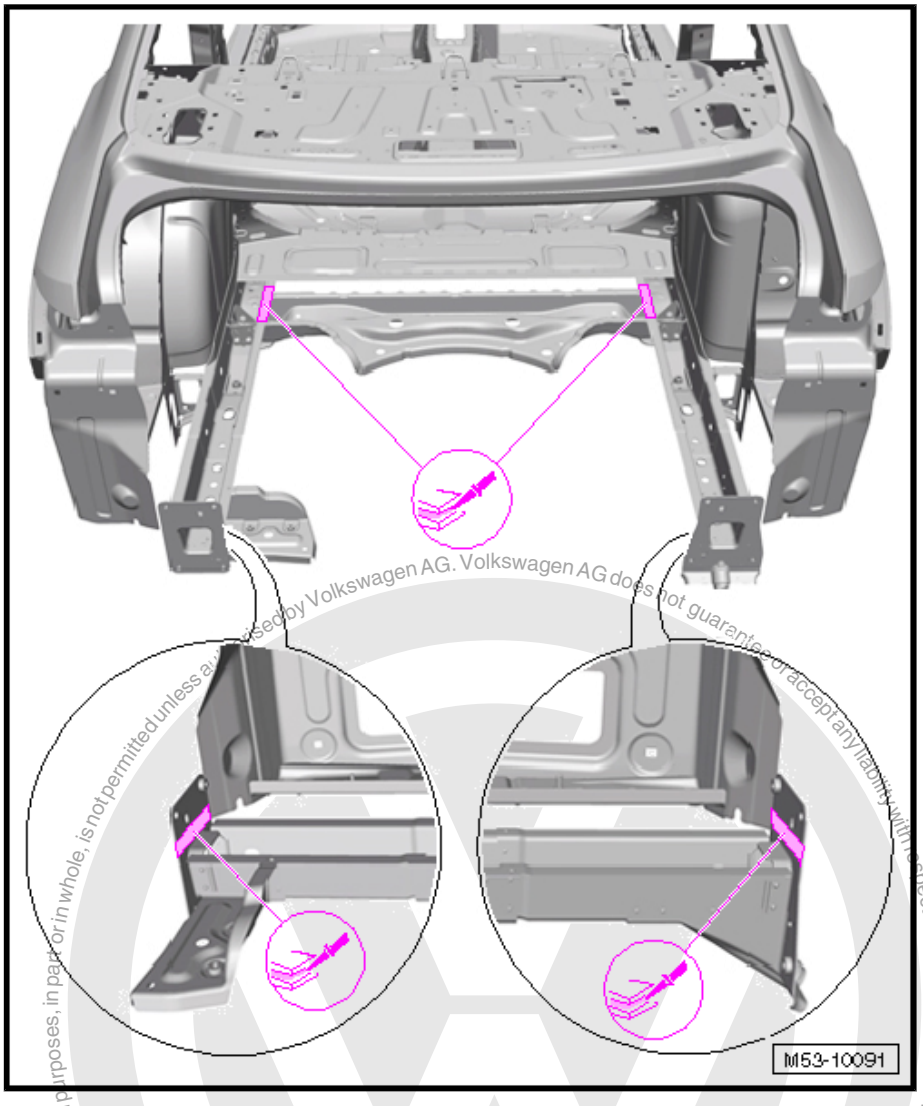
5.3.3 Welding

All Vehicles

Note

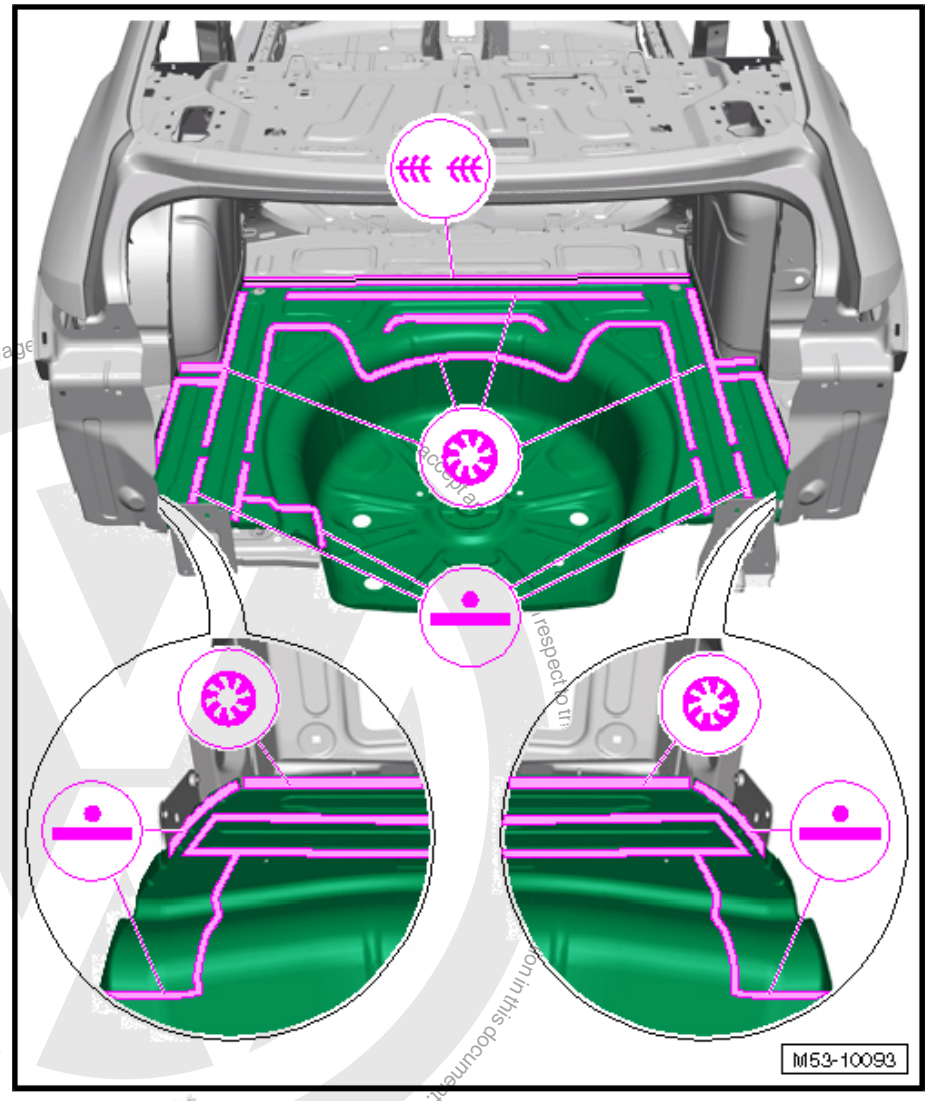
New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

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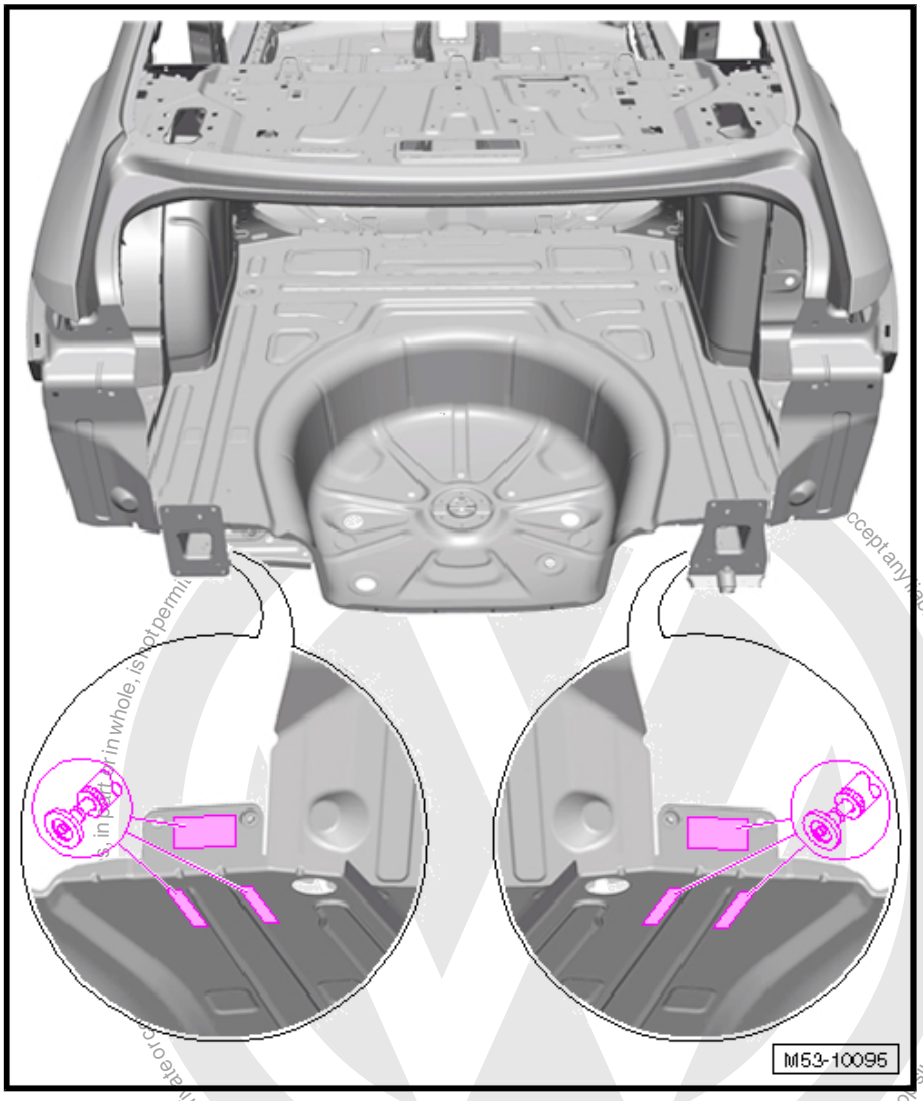
– Apply 2K Body Adhesive - D 180 KD3 A2- in the areas in the areas where it was bonded during production.
– Fit the new part to vehicle standing on its wheels or on an Alignment Bracket Set and secure.
– Check fit with attachments.

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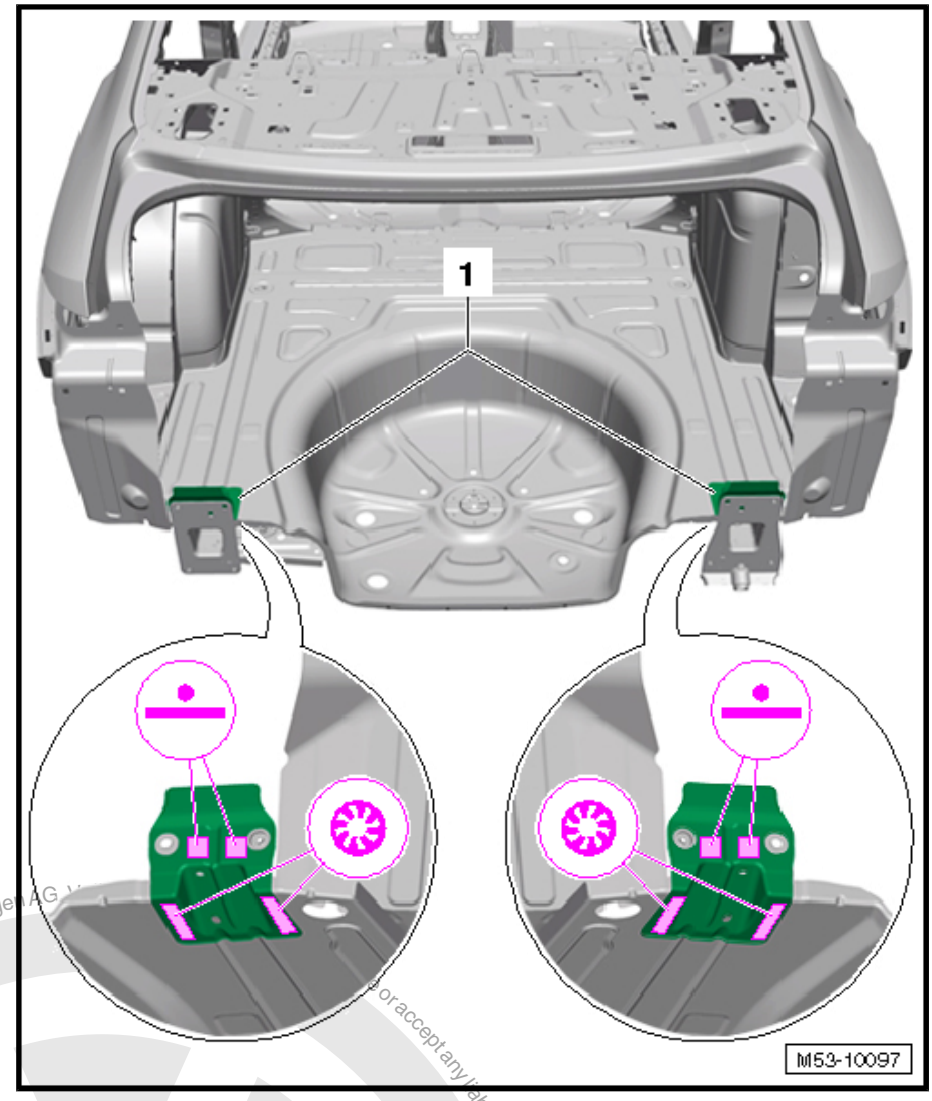
– Weld the luggage compartment floor panel with a gas-shielded arc plug weld seam and a straight-line spot weld seam.

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– Grind the weld areas for the bumper carrier reinforcement down to the bare metal.

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– Weld the bumper bracket reinforcement -1- with a straight-line spot weld seam and gas-shielded arc plug weld seam.

Hybrid Vehicles

– Install the rear longitudinal member reinforcement, refer to ⇒ “9.3 Installing”, page 299 .

– Install the battery mount, refer to ⇒ “10.3 Installing”, page 305 .

All Vehicles

– Install the cross panel, refer to ⇒ “1.3 Installing”, page 257 .

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RO: 53 29 55 50

6 C-Pillar Reinforcement, Replacing Partial Section

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

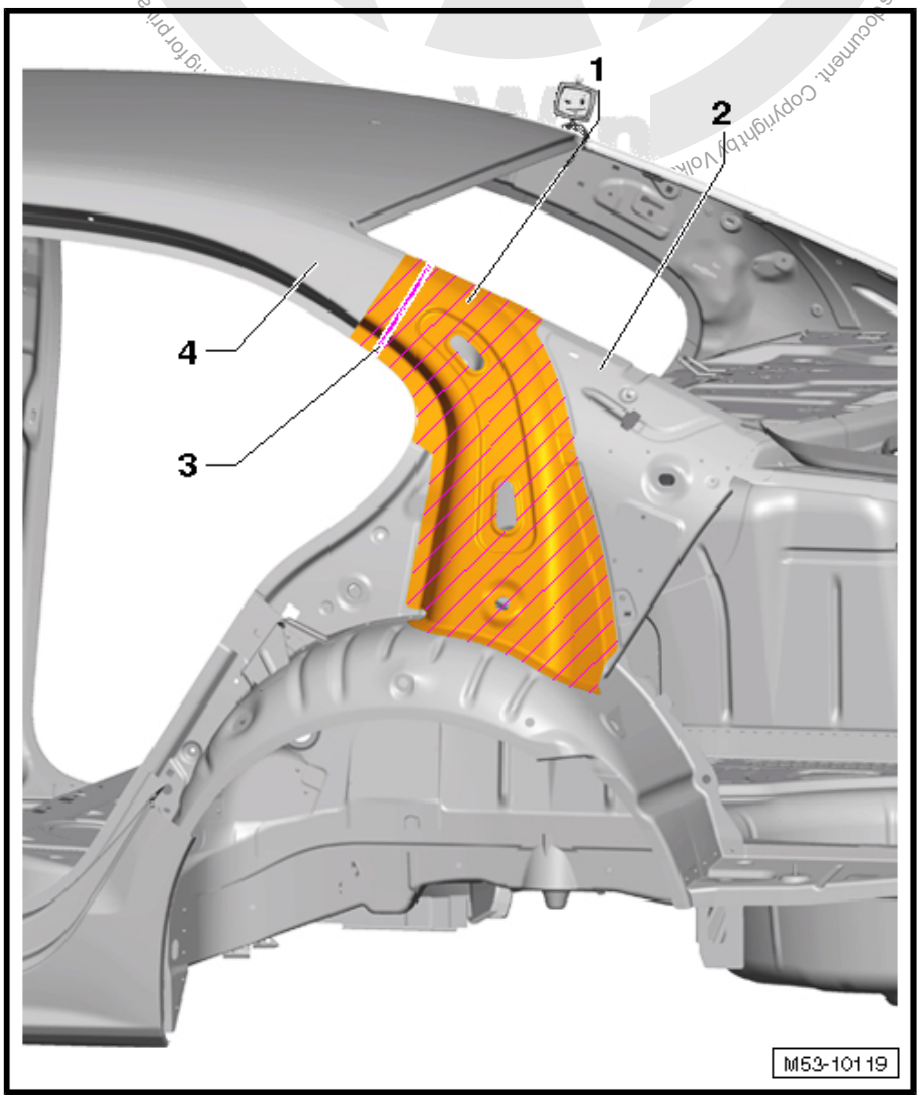
- Side panel (partial section) already removed, refer to ⇒ “11 Side Panel, Replacing Partial Section”, page 308 .
- Hybrid vehicles: tail lamp reinforcement already removed, refer to ⇒ “4 Tail Lamp Reinforcement, Replacing, Hybrid Vehicles”, page 268 .

1 - C-Pillar Reinforcement

2 - Inner Side Panel

3 - Separating Cut

4 - Side Panel



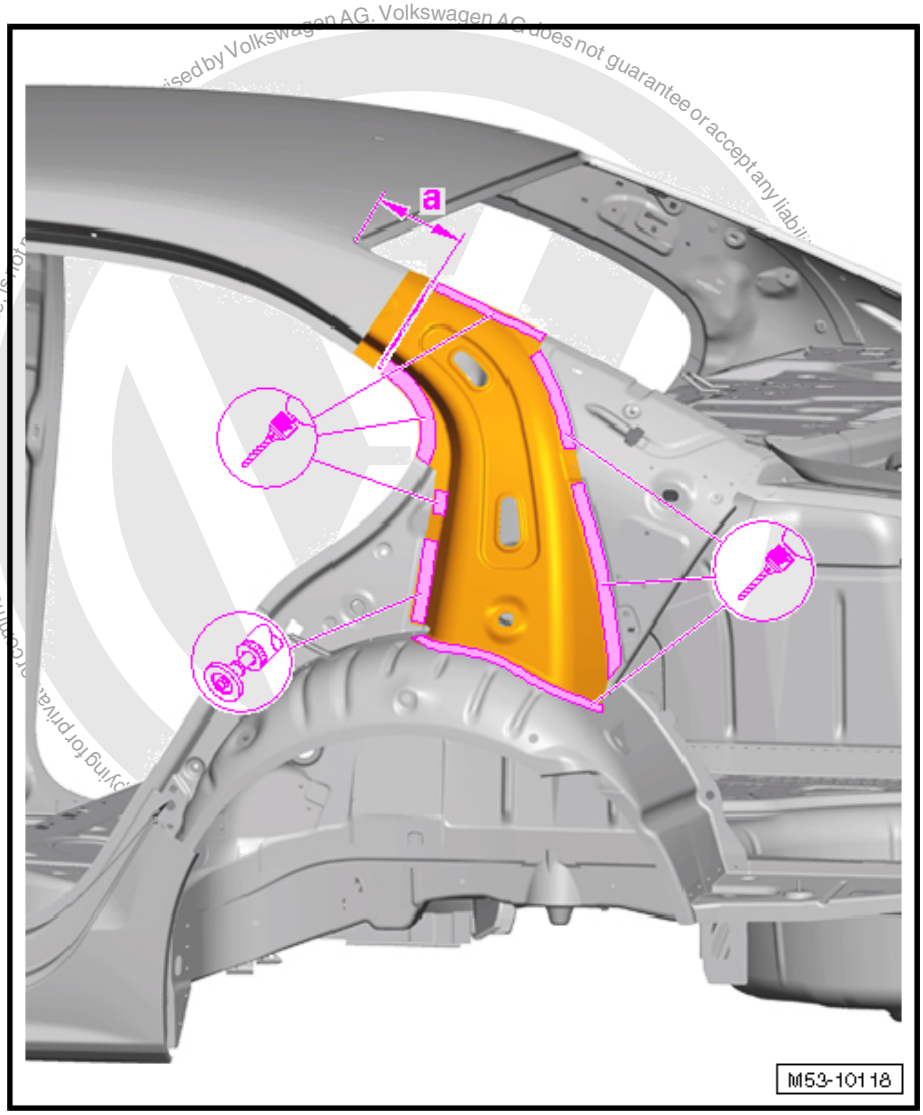
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6.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

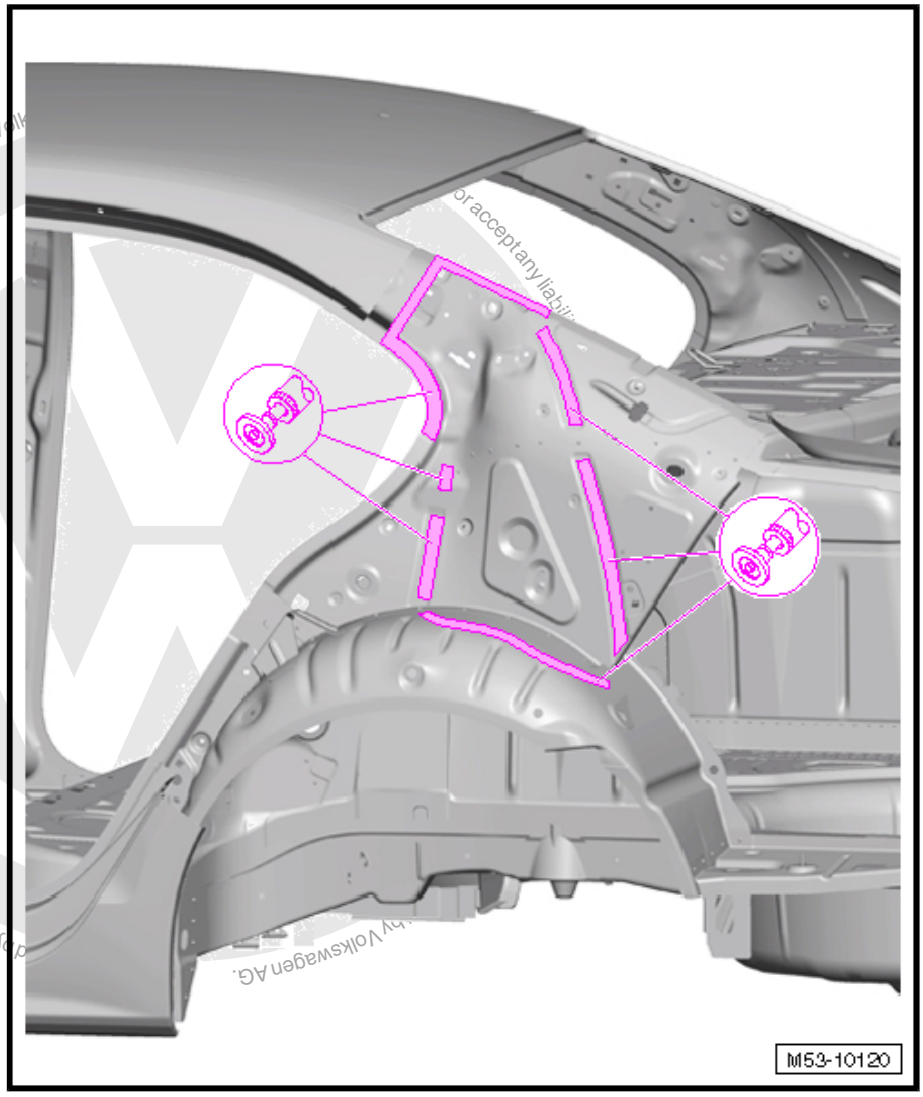
6.2 Removing



– Place separating cut as shown.

Dimension -a- = 150 mm

– Separate the original joint.



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– Remove residual material.

6.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ “8.1 Tools”, page 294 .

6.3.1 Preparing New Parts

New Part

♦ C-pillar reinforcement



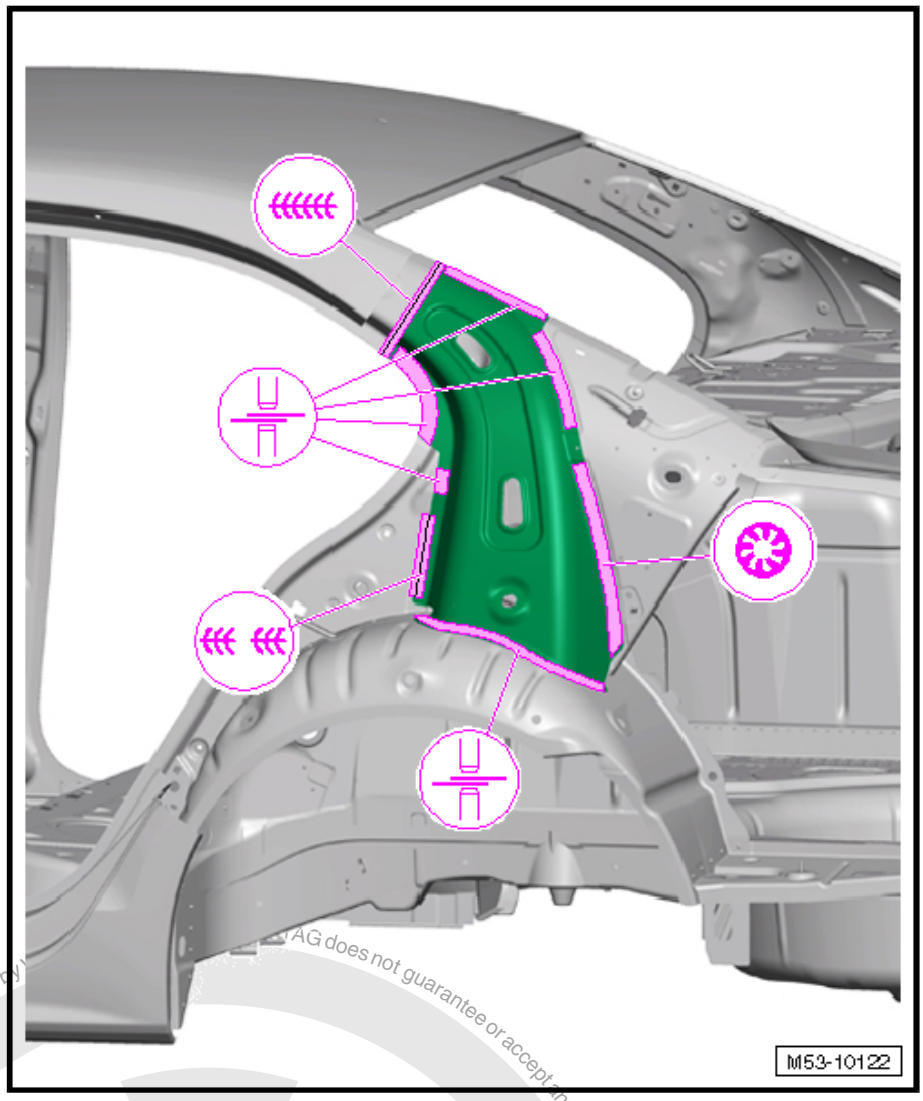
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– Transfer separating cuts onto new part and cut to shape.
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

6.3.2 Welding

– Fit the new part to vehicle standing on its wheels or on an Alignment Bracket Set and secure.

– Check fit with attachments.



– Weld the C-pillar reinforcement with a gas-shielded arc plug weld seam and gas-shielded arc continuous weld seam (staggered).
– Weld the separation cut with a gas-shielded arc continuous weld seam.

Hybrid Vehicles

– Install the tail lamp reinforcement, refer to ⇒ “4.3 Installing”, page 270 .

All Vehicles

– Install the side panel, refer to ⇒ “11.3 Installing”, page 312 .

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RO: 53 47 55 52

7 Rear Longitudinal Member, Replacing Partial Section

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

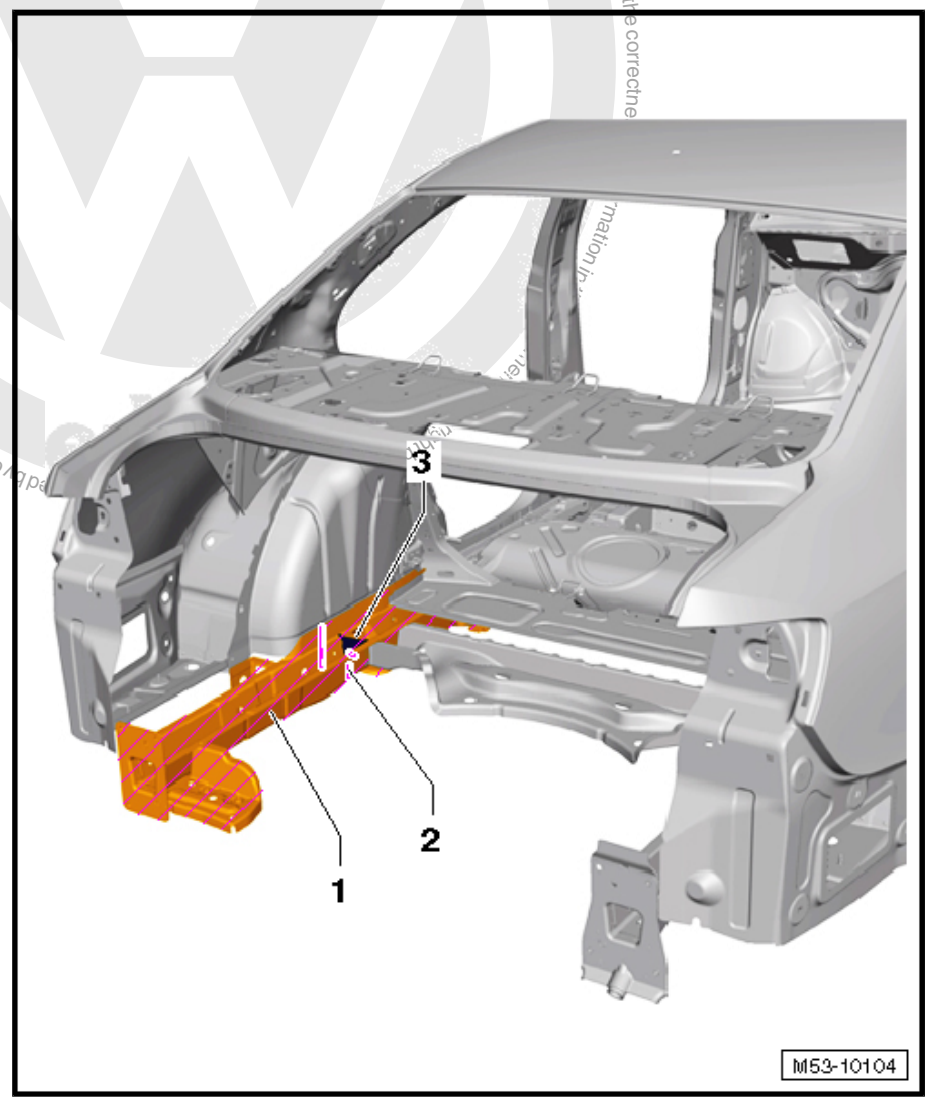
⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Lower back panel already removed, refer to ⇒ “1 Cross Panel, Replacing”, page 254 .
- The luggage compartment floor panel is already removed, refer to ⇒ “5 Luggage Compartment Floor, Replacing”, page 272 .

1 - Rear Longitudinal Member -Partial Section

2 - Separating Cut

3 - Molded Foam Part



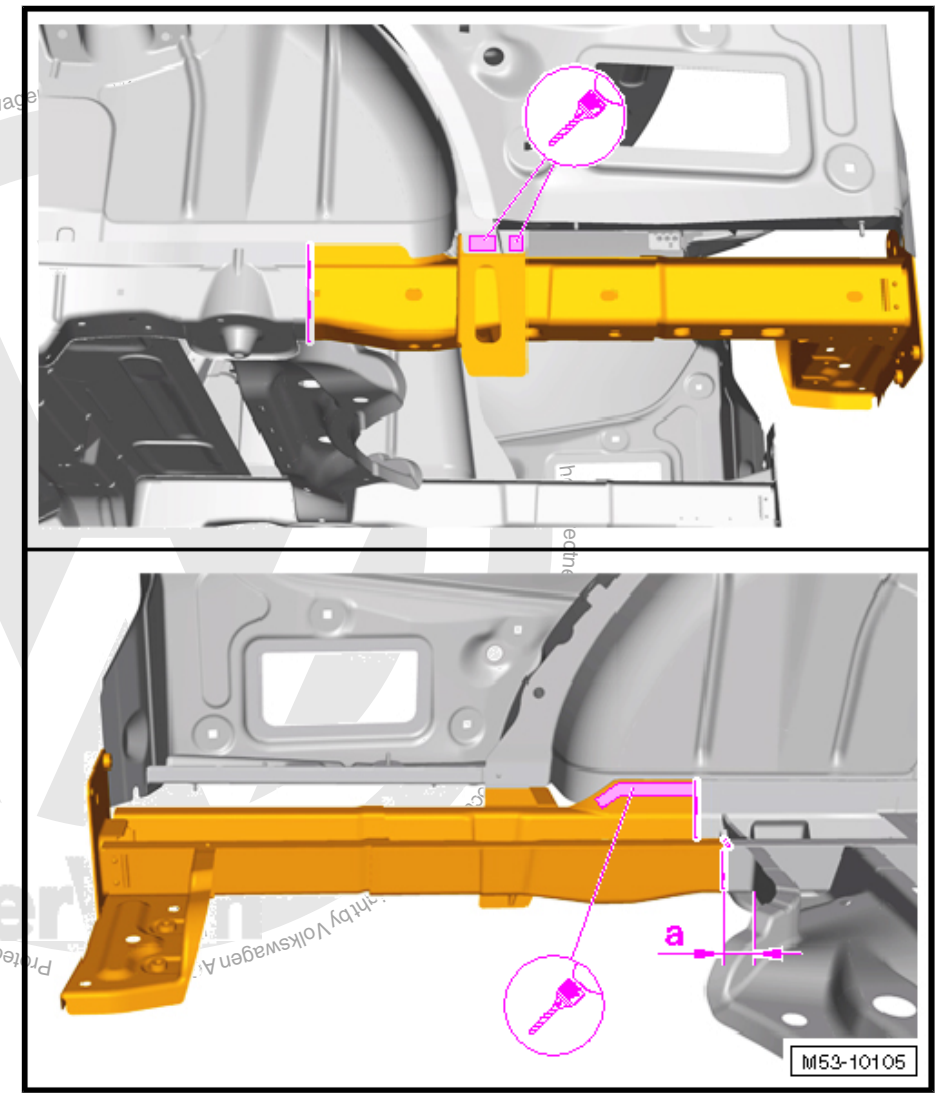
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7.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

7.2 Removing

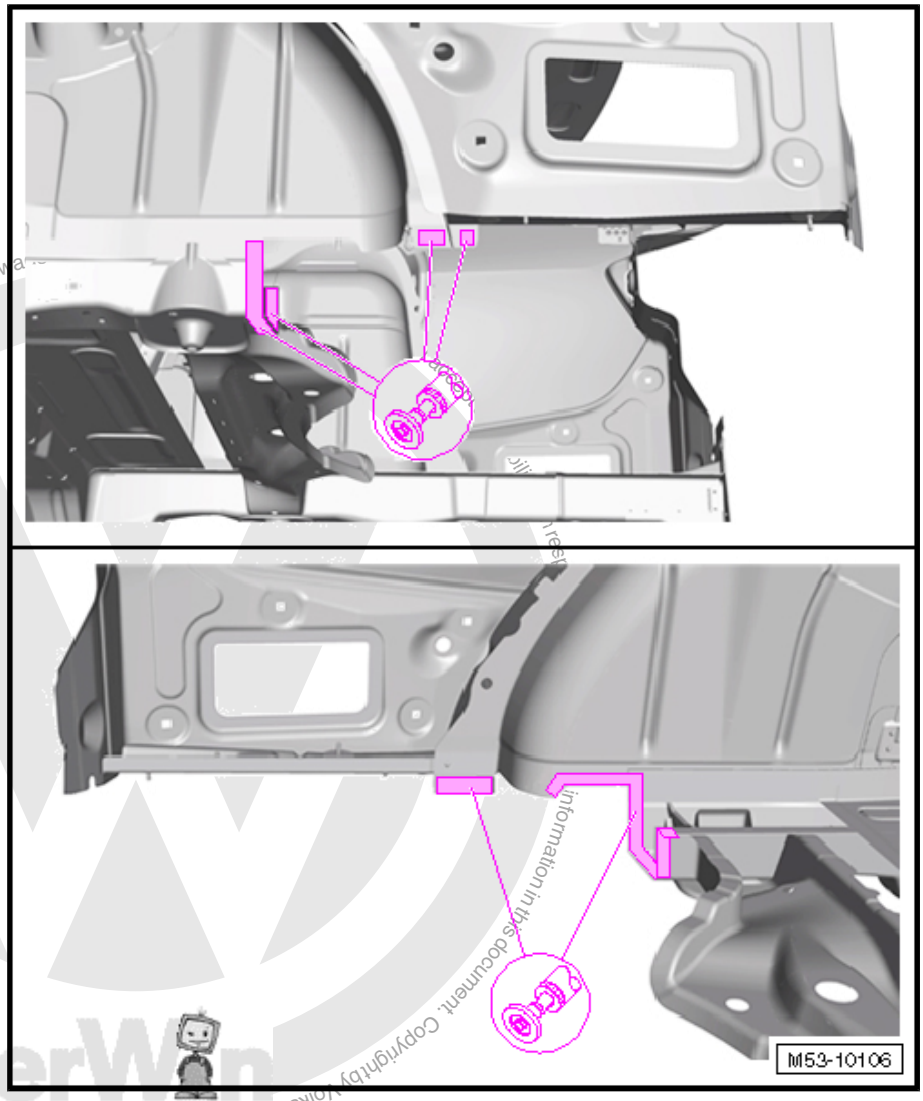


– Place separating cut as shown.

Dimension -a- = 50 mm

– Separate the original joint on the wheel housing and on the side panel reinforcement.

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– Remove residual material.

7.3 Installing

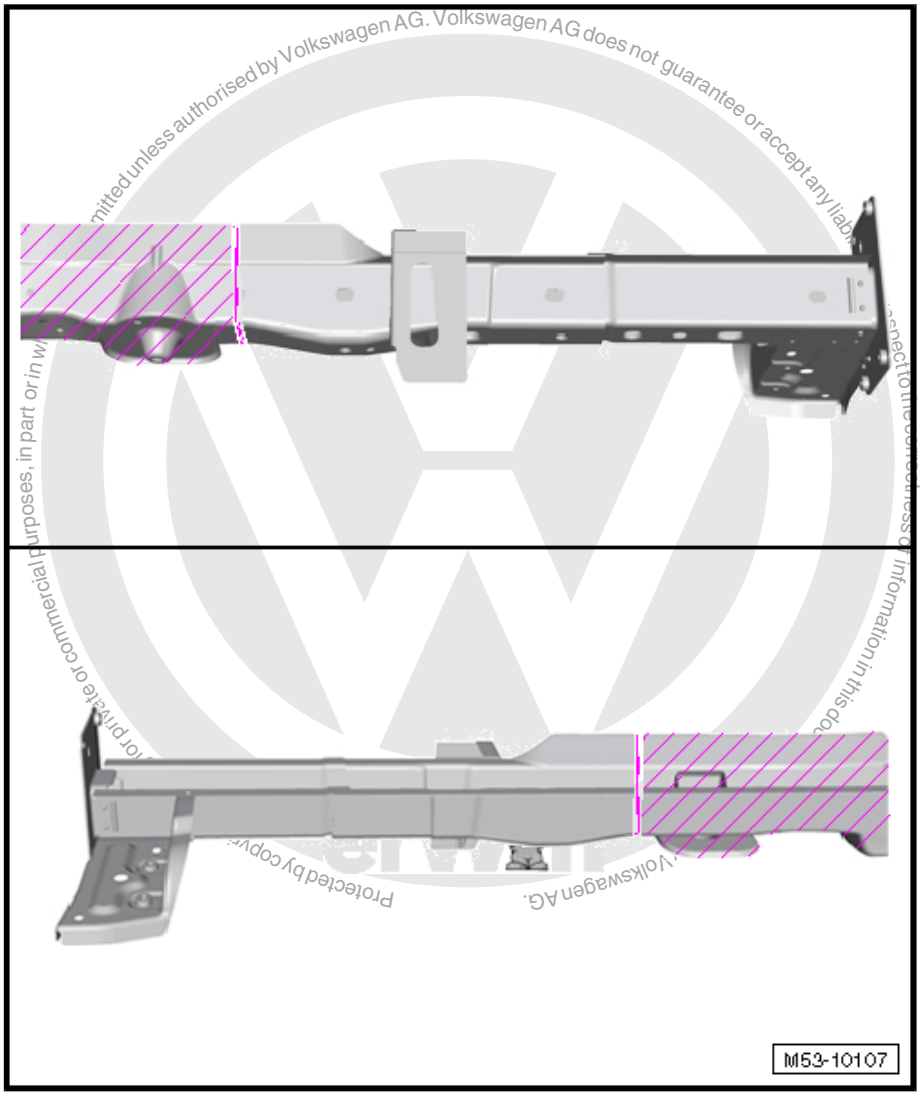
Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "7.1 Tools", page 289 .

7.3.1 Preparing New Parts

New Part

- Rear Longitudinal Member

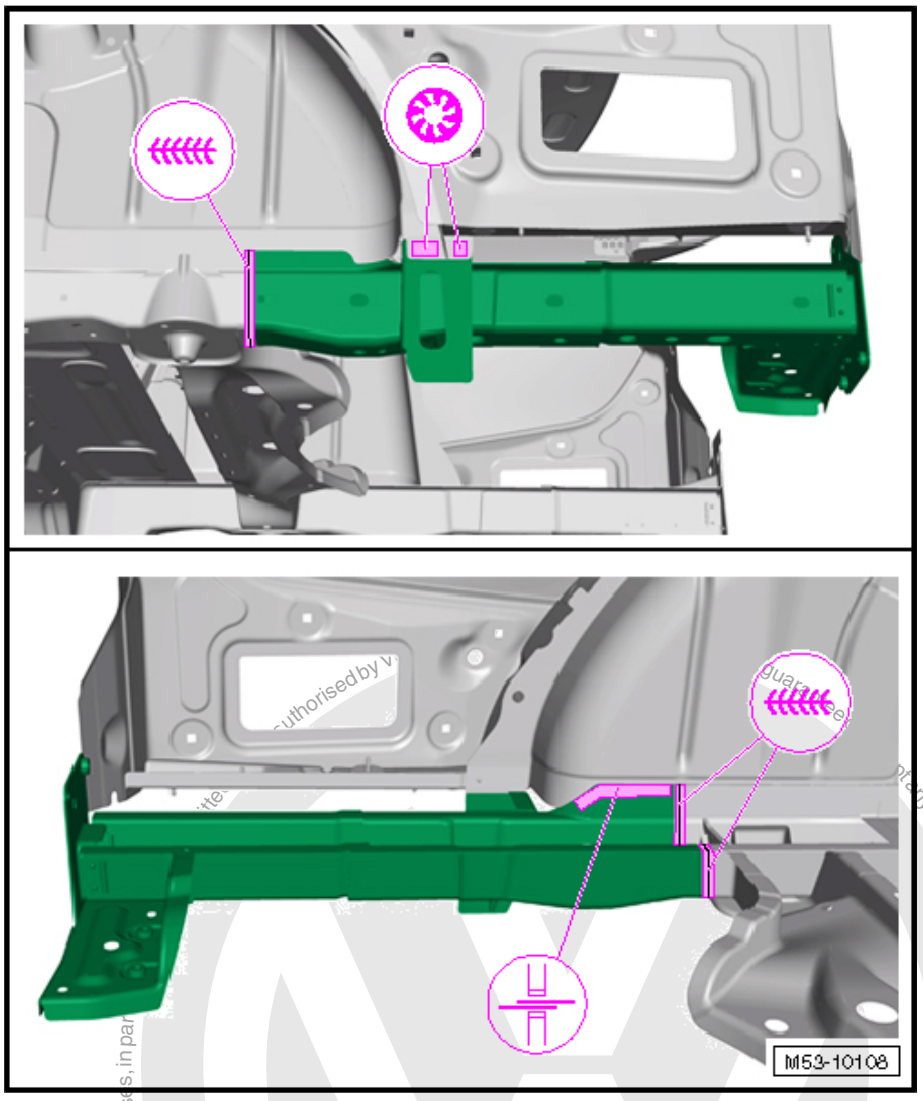


– Transfer separating cuts onto new part and cut to shape.

7.3.2 Welding

– Fit new part to vehicle standing on Straightening Bracket Set and secure.

– Check fit with attachments.



– Butt weld around separating cut; Gas-shielded arc continuous weld seam.
– Weld in longitudinal member for wheel housing, SG plug weld seam and RP spot weld seam.
– Install the luggage compartment floor panel, refer to ⇒ “5.3 Installing”, page 276 .
– Install the cross panel, refer to ⇒ “1.3 Installing”, page 257 .

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RO: 53 48 55 50

8 Rear Longitudinal Member, Replacing Sub-Part

WARNING

Follow all safety precautions.

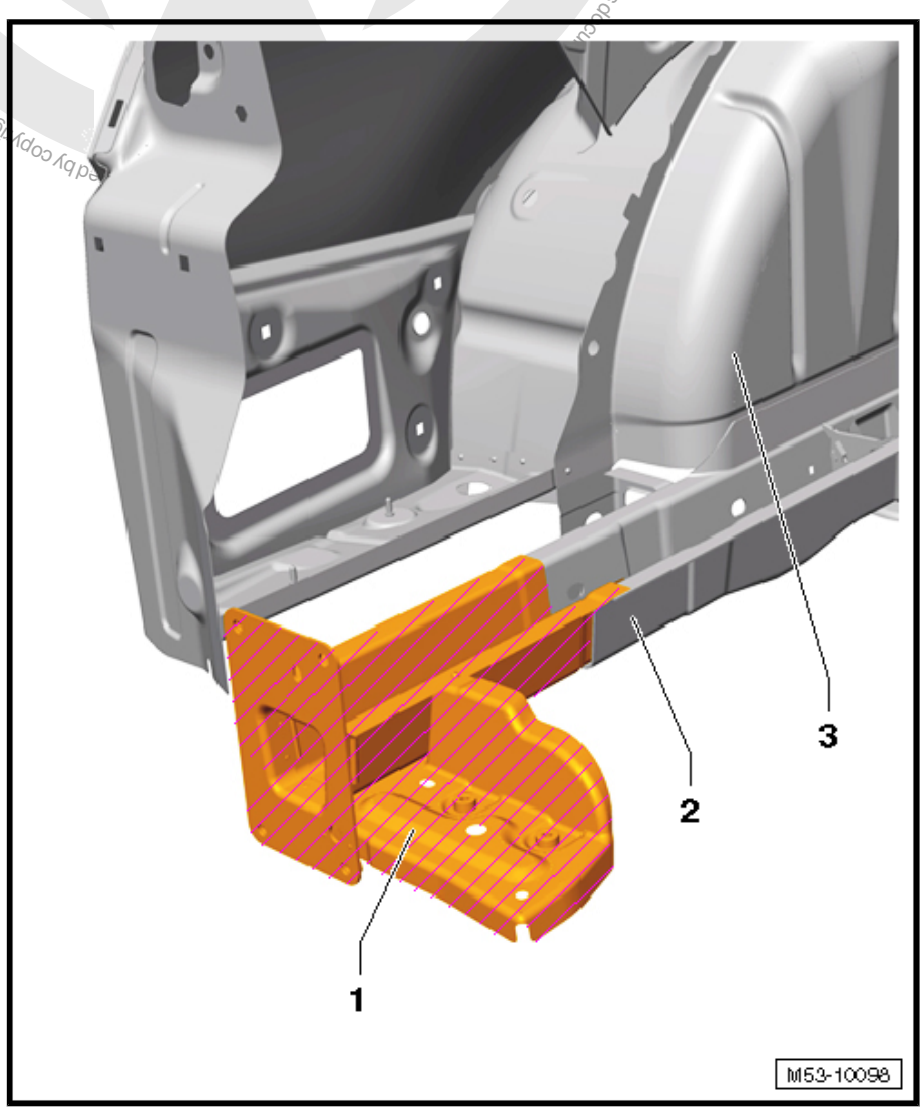
⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Lower back panel already removed, refer to ⇒ “1 Cross Panel, Replacing”, page 254 .
- The luggage compartment floor panel is already removed, refer to ⇒ “5 Luggage Compartment Floor, Replacing”, page 272 .

1 - Rear Longitudinal Member Sub-Part

2 - Rear Longitudinal Member

3 - Wheel Housing



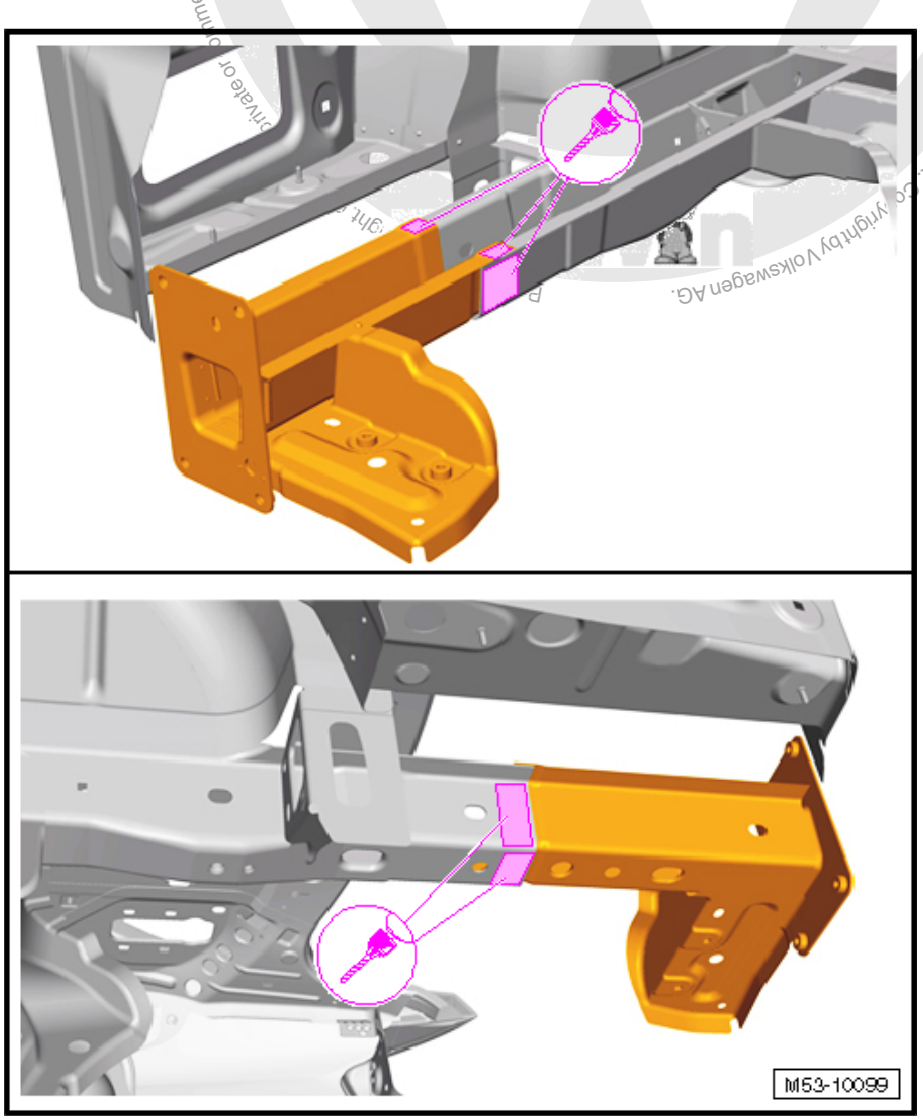
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8.1 Tools

Note

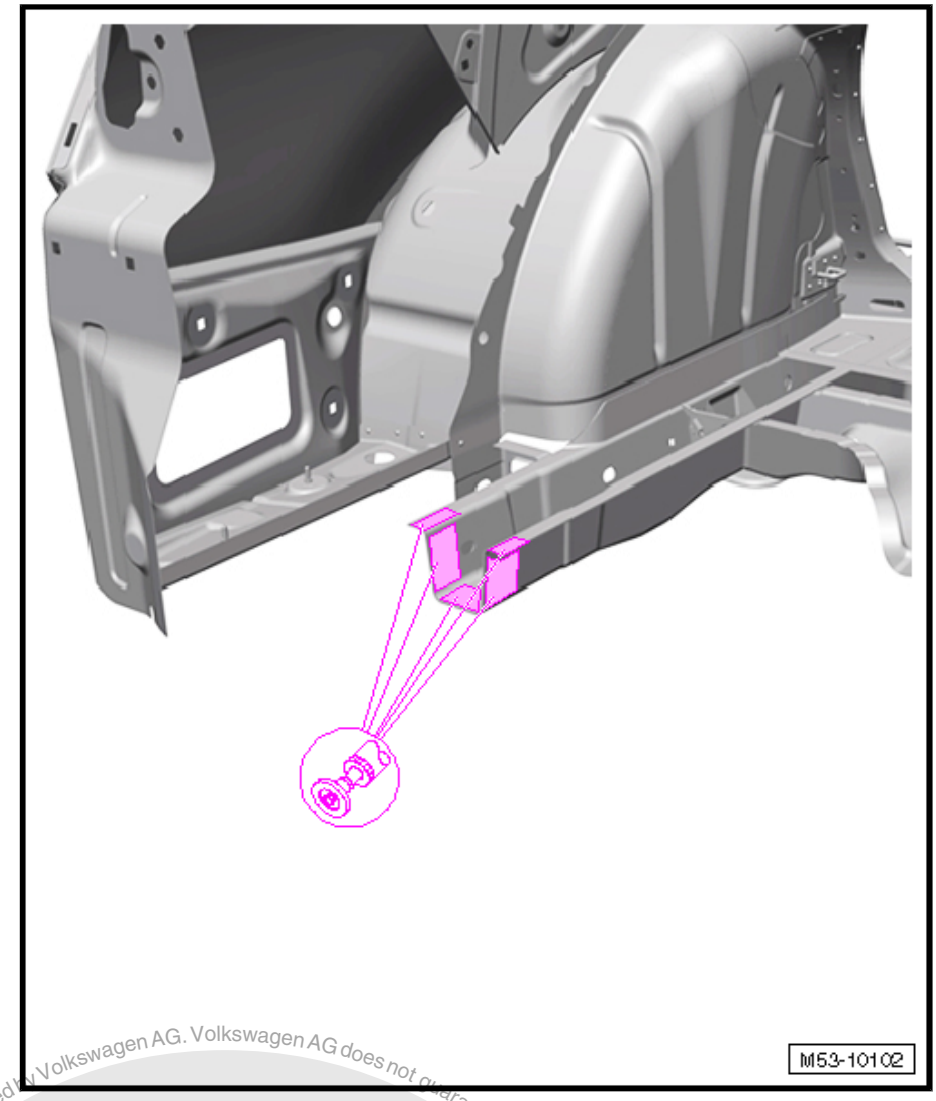
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

8.2 Removing



– Separate the original joint.

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– Remove residual material.

8.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "8.1 Tools", page 294 .

8.3.1 Preparing New Parts

New Part

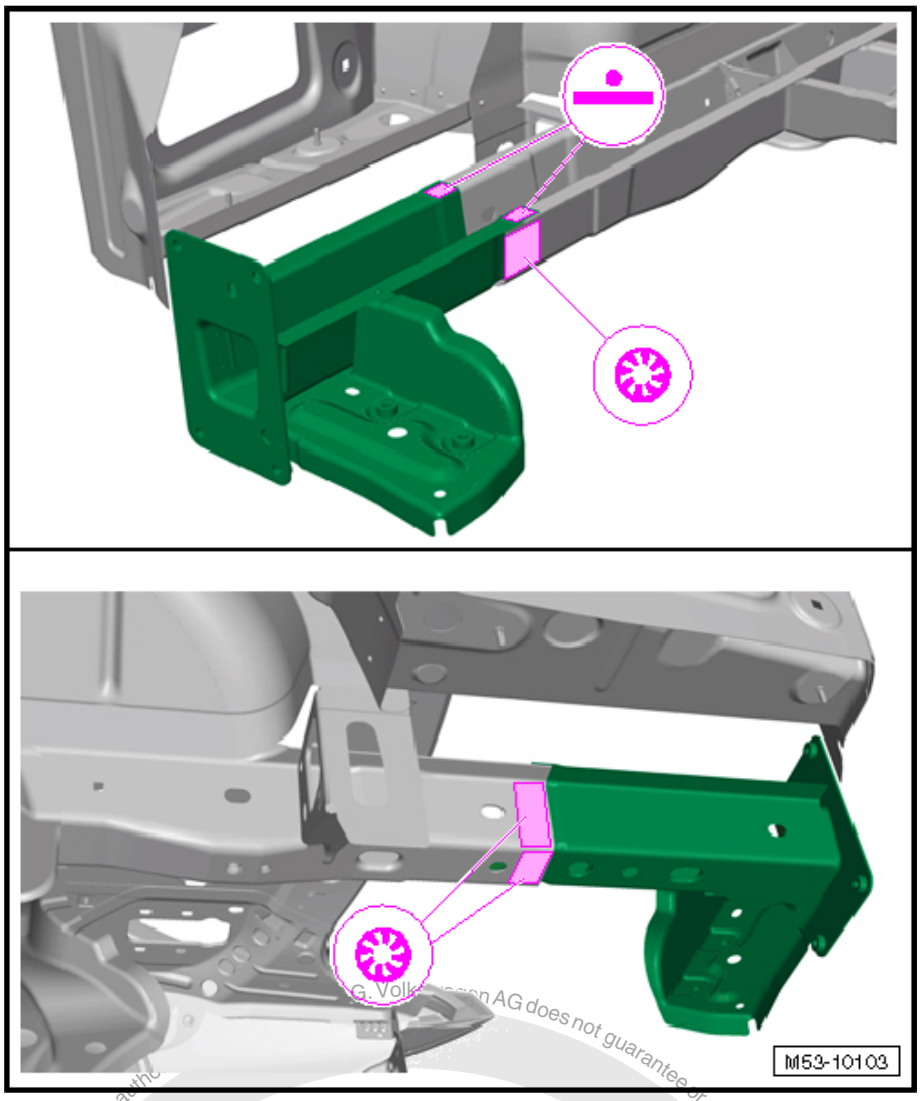
♦ Rear Longitudinal Member Sub-Part

8.3.2 Welding

– Fit new part to vehicle standing on Straightening Bracket Set and secure.

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– Check fit with attachments.



– Weld the rear luggage compartment floor panel with a gas-shielded arc plug weld seam and a straight-line spot weld seam.
– Install the luggage compartment floor panel, refer to ⇒ “5.3 Installing”, page 276.
– Install the cross panel, refer to ⇒ “1.3 Installing”, page 257 .

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RO: 53 49 55 50

9 Rear Longitudinal Member Reinforcement, Replacing, Hybrid Vehicles

WARNING

Follow all safety precautions.

⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

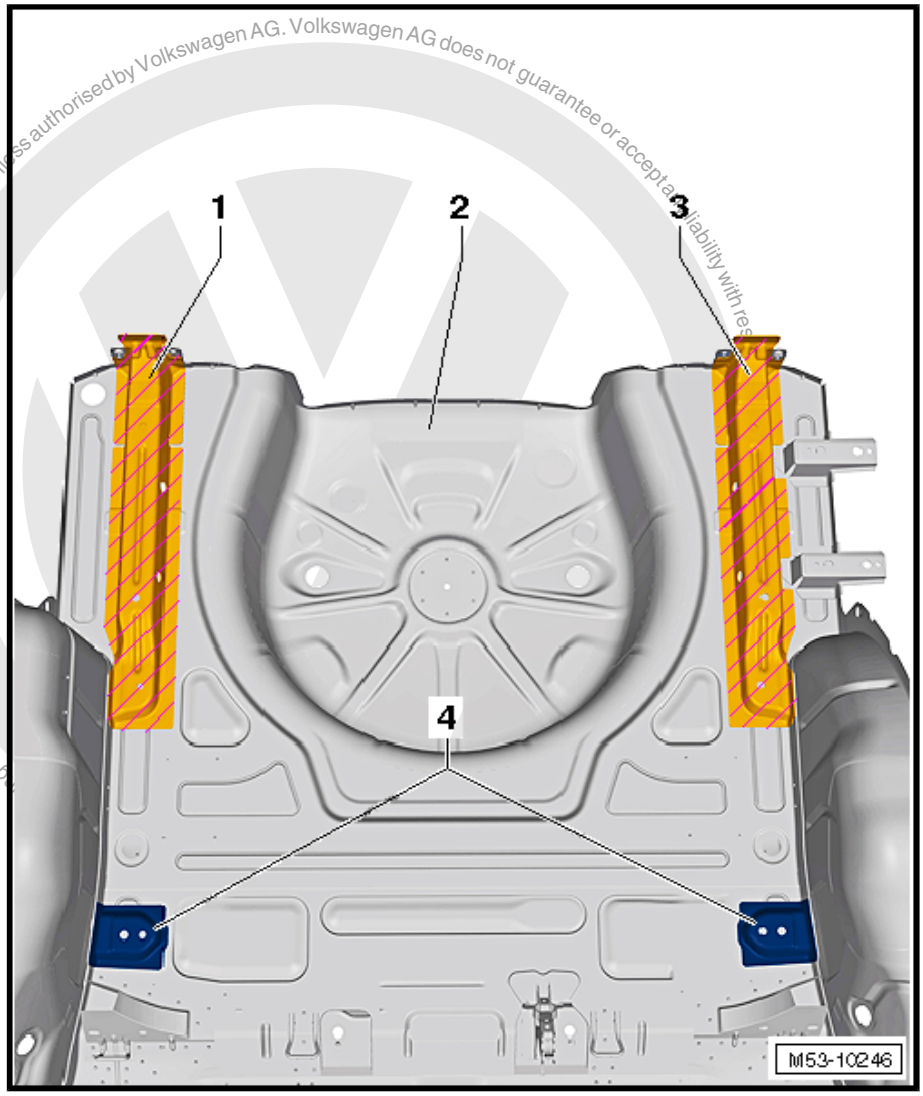
- Tail lamp mount already removed, refer to ⇒ “3 Tail Lamp Mount, Replacing”, page 264 .
- Cross panel already removed, refer to ⇒ “1 Cross Panel, Replacing”, page 254 .

1 - Right Longitudinal Member Reinforcement

2 - Luggage Compartment Floor

3 - Left Longitudinal Member Reinforcement

4 - Subframe Bracket



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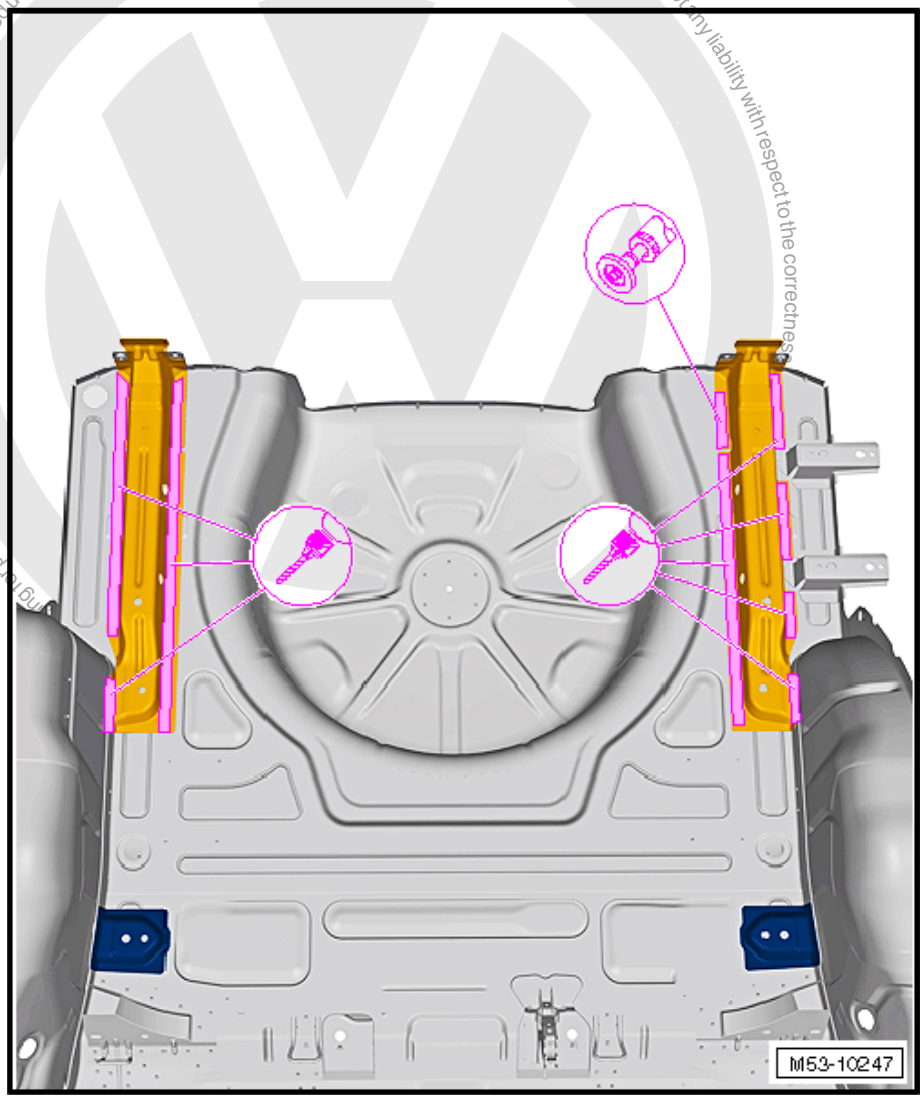
9.1 Tools

Note

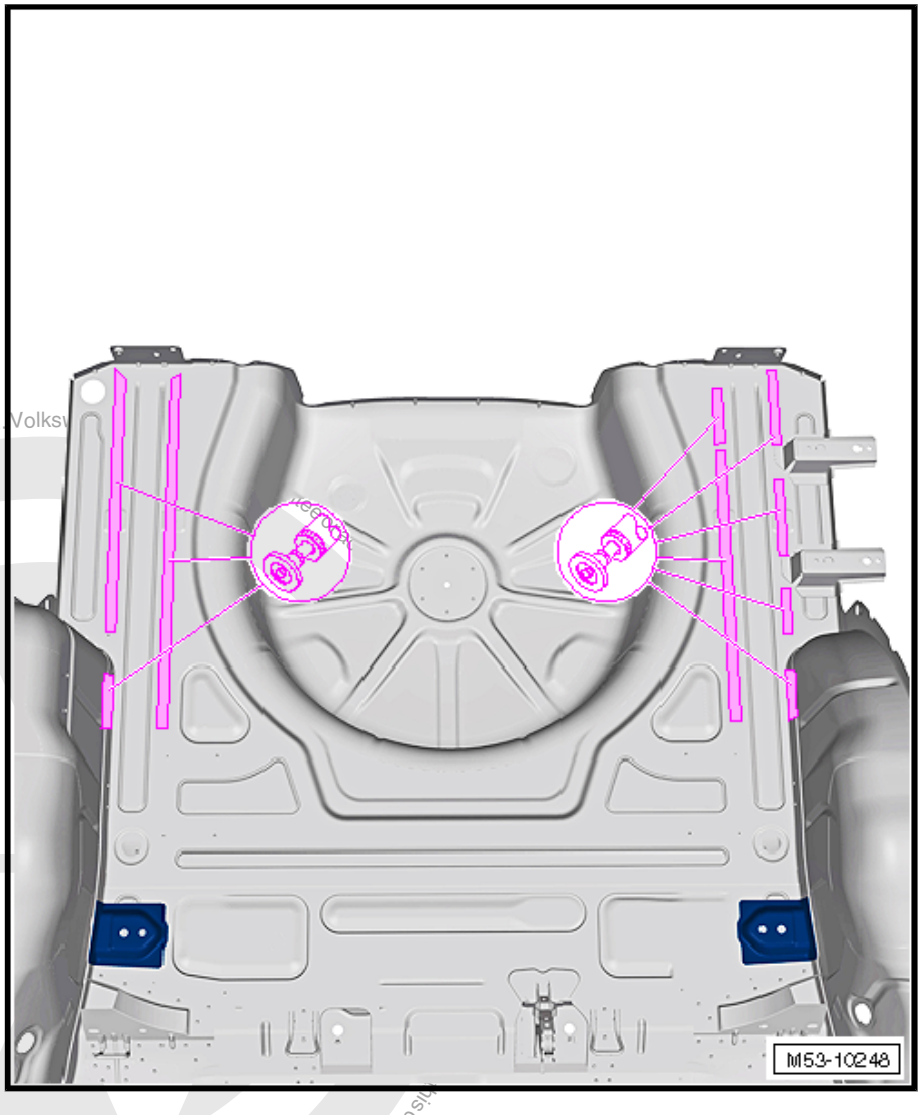
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

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9.2 Removing



– Cut the original joint to the luggage compartment floor panel and to the inner wheel housing.



– Remove residual material.

9.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "9.1 Tools", page 298 .

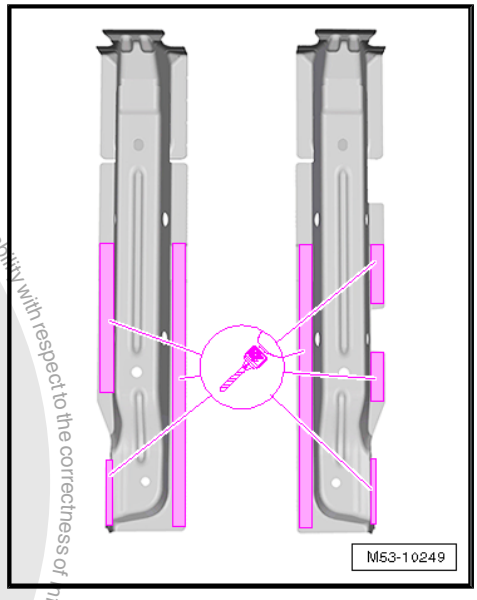
9.3.1 Preparing New Parts

New Part

- Longitudinal Member Reinforcement

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– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.



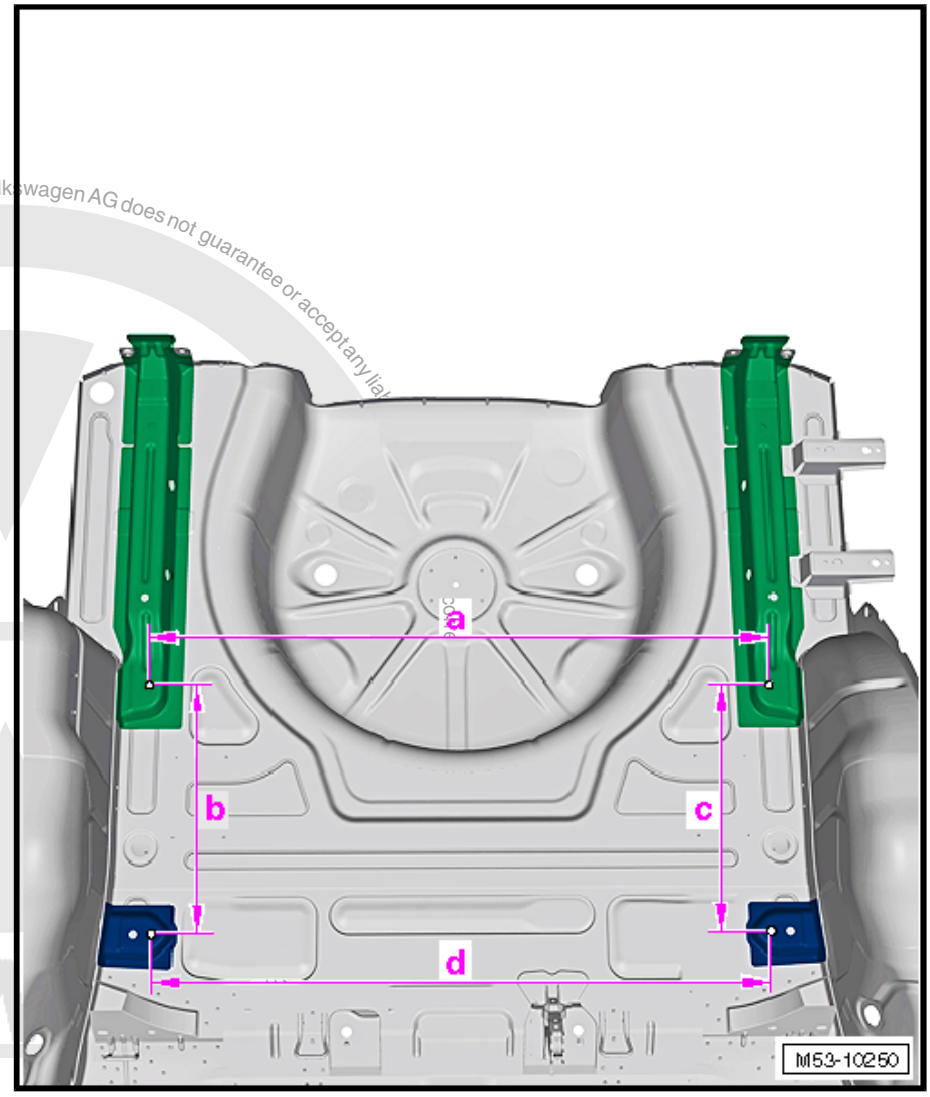
9.3.2 Welding

– Fit the new part to vehicle standing on its wheels or on an Alignment Bracket Set and secure.

– Check fit with attachments.

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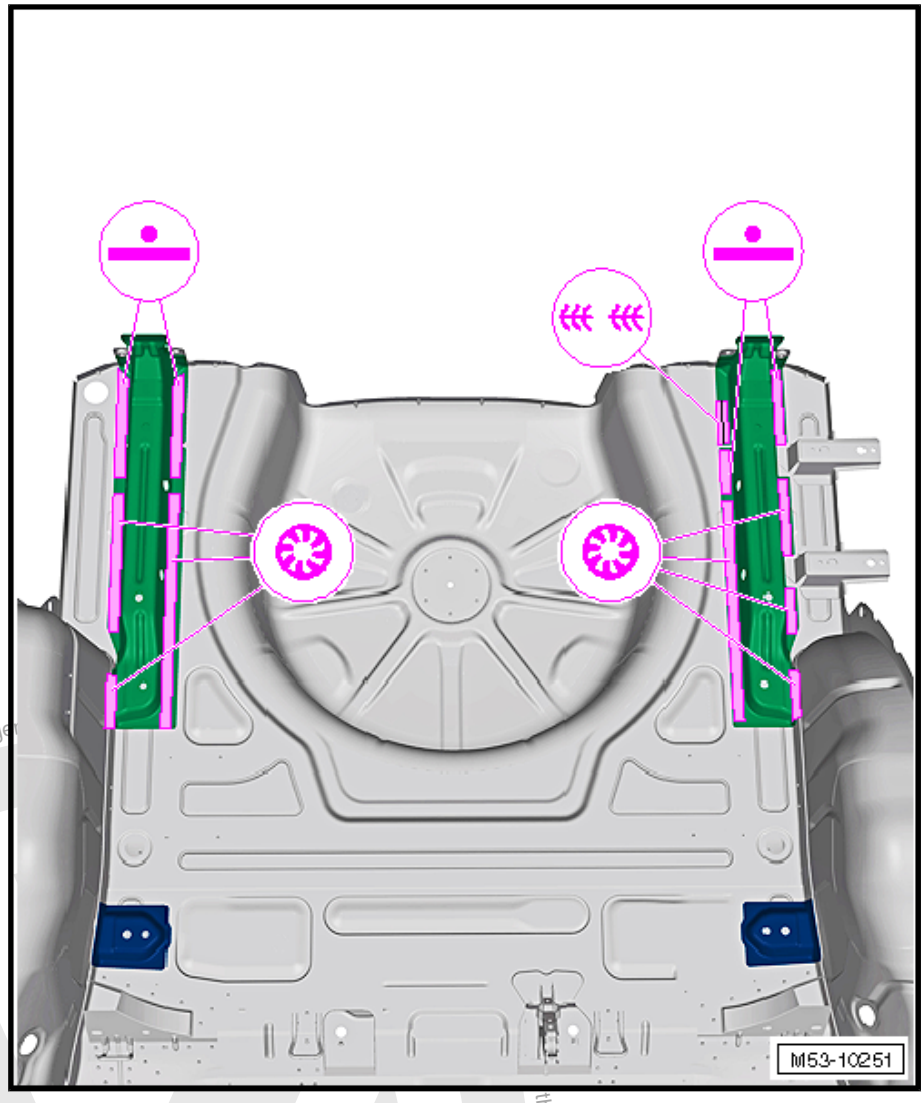
– Adjust the new parts according to the specified measurements and secure them.

Dimension -a- = 970 mm ± 1.5 mm

Dimension -b- = 386 ± 1.5 mm.

Dimension -c- = 386 ± 1.5 mm.

Dimension -d- = 932 mm ± 1.5 mm



– Weld the longitudinal member reinforcement, gas-shielded arc plug weld seam. gas-shielded arc continuous weld seam (staggered) and straight-line spot weld seam.
– Install the cross panel, refer to ⇒ “1.3 Installing”, page 257 .
– Install the tail lamp mount, refer to ⇒“3.3 Installing”, page 266 .

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10 Rear Battery Mount, Replacing, Hybrid Vehicles

WARNING

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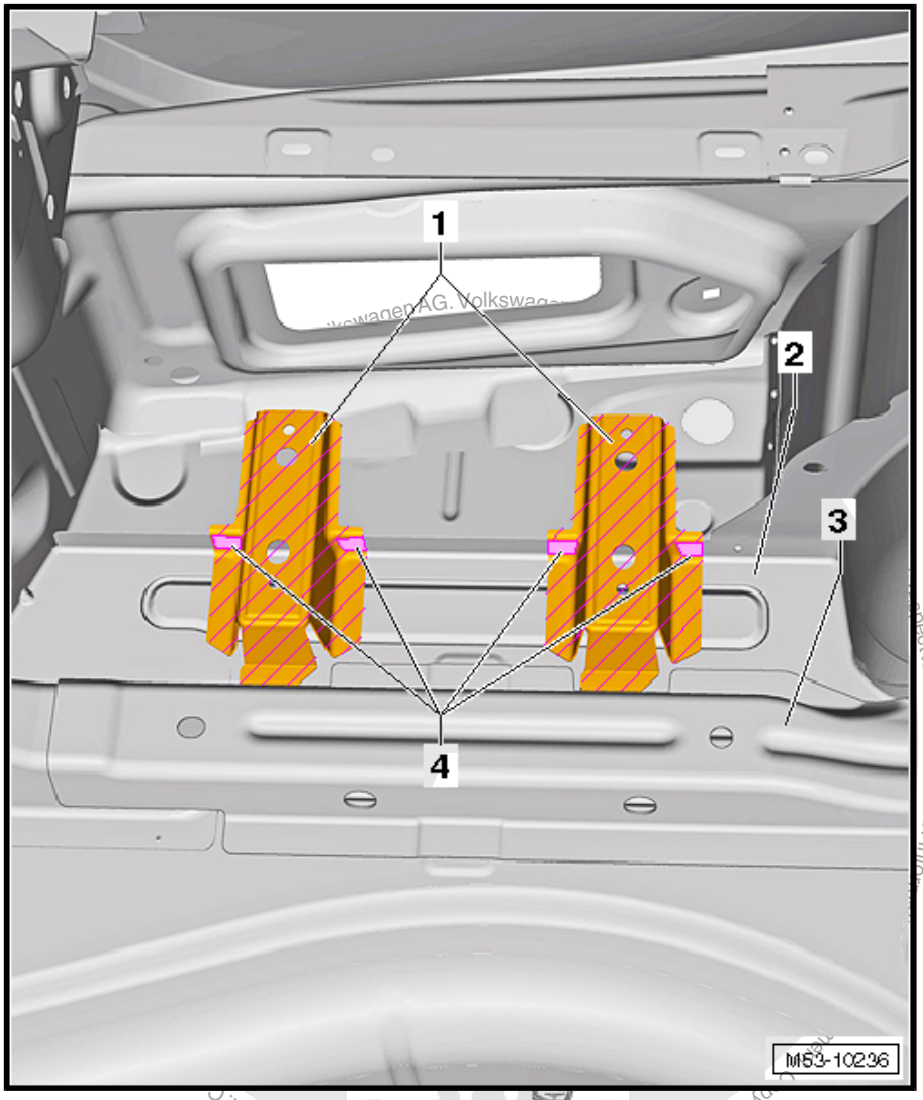
⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Battery Mount

2 - Luggage Compartment Floor

3 - Left Rear Longitudinal Member Reinforcement

4 - Adhesive Areas



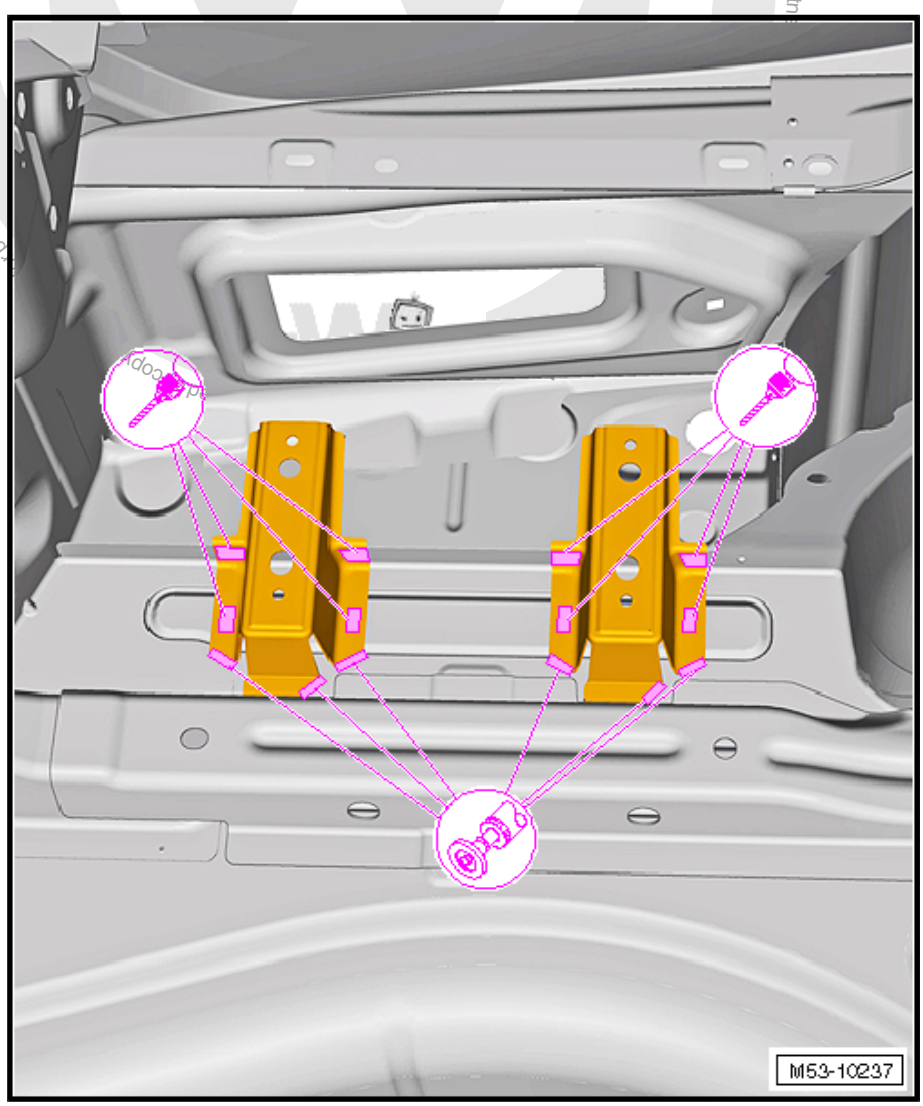
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10.1 Tools

Note

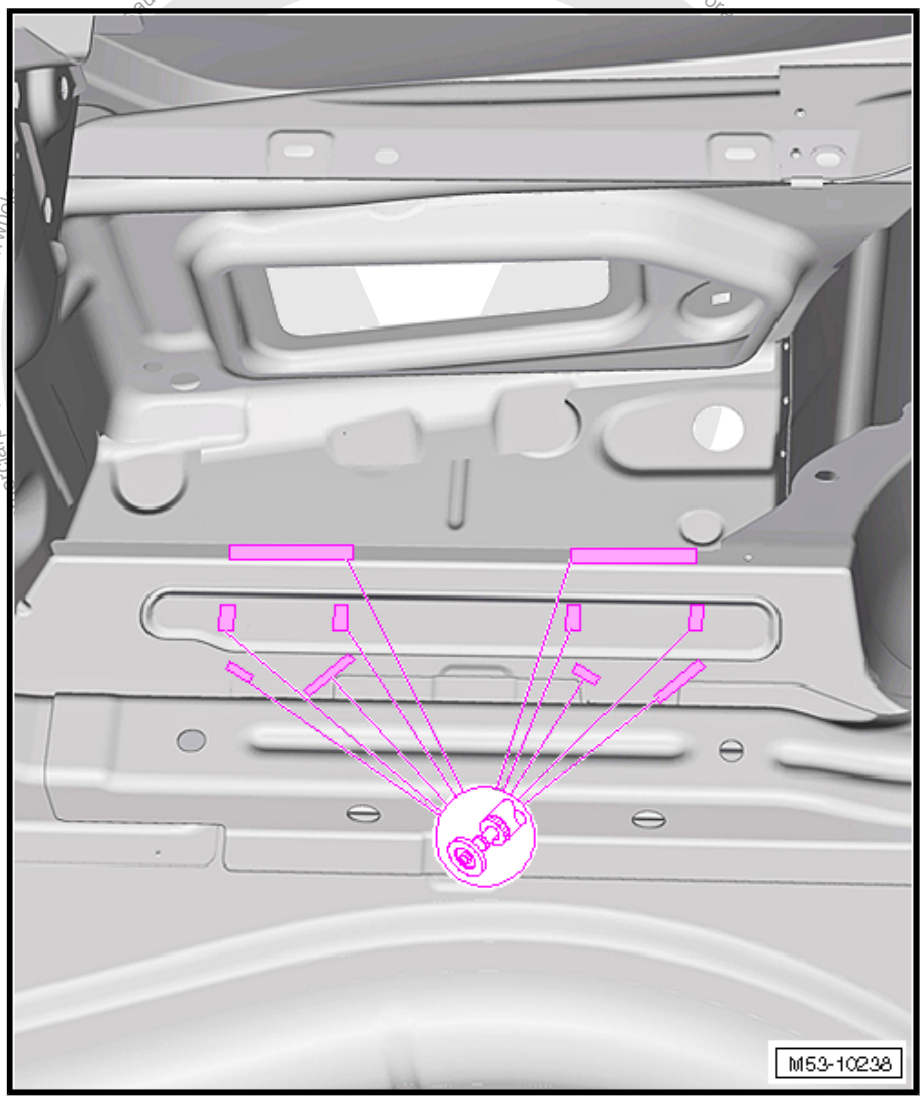
- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

10.2 Removing



– Cut the original joint to the luggage compartment floor panel

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– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.
– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
– Lightly sand the adhesive surfaces in the connection.

10.3 Installing

Note

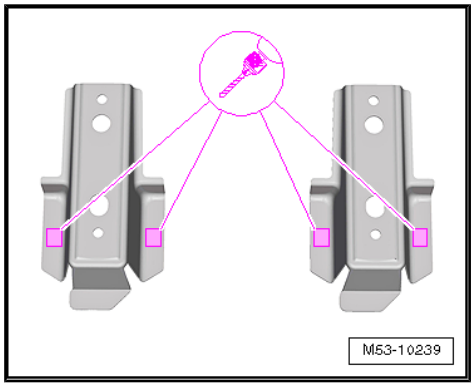
Use only welding equipment approved by Volkswagen AG, refer to ⇒ "10.1 Tools", page 304 .

10.3.1 Preparing New Parts

New Part

♦ Battery Mount

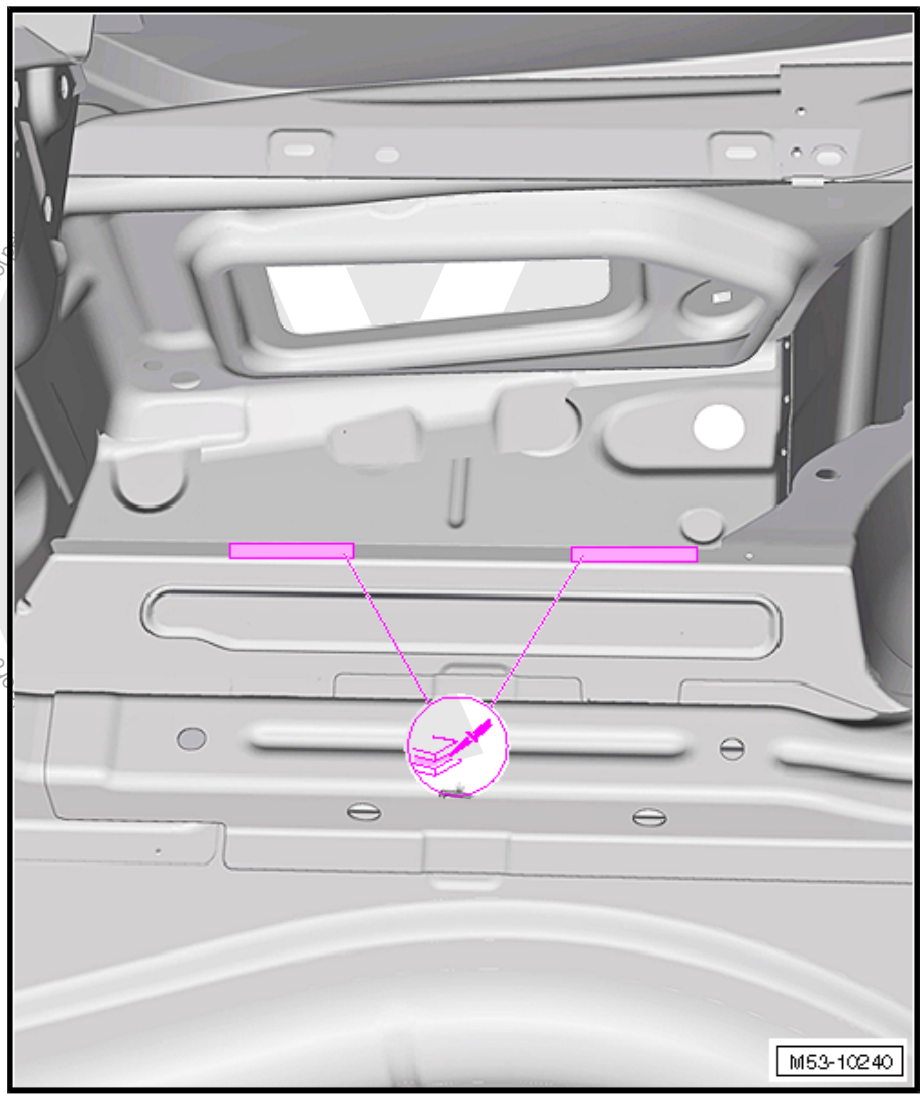
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.



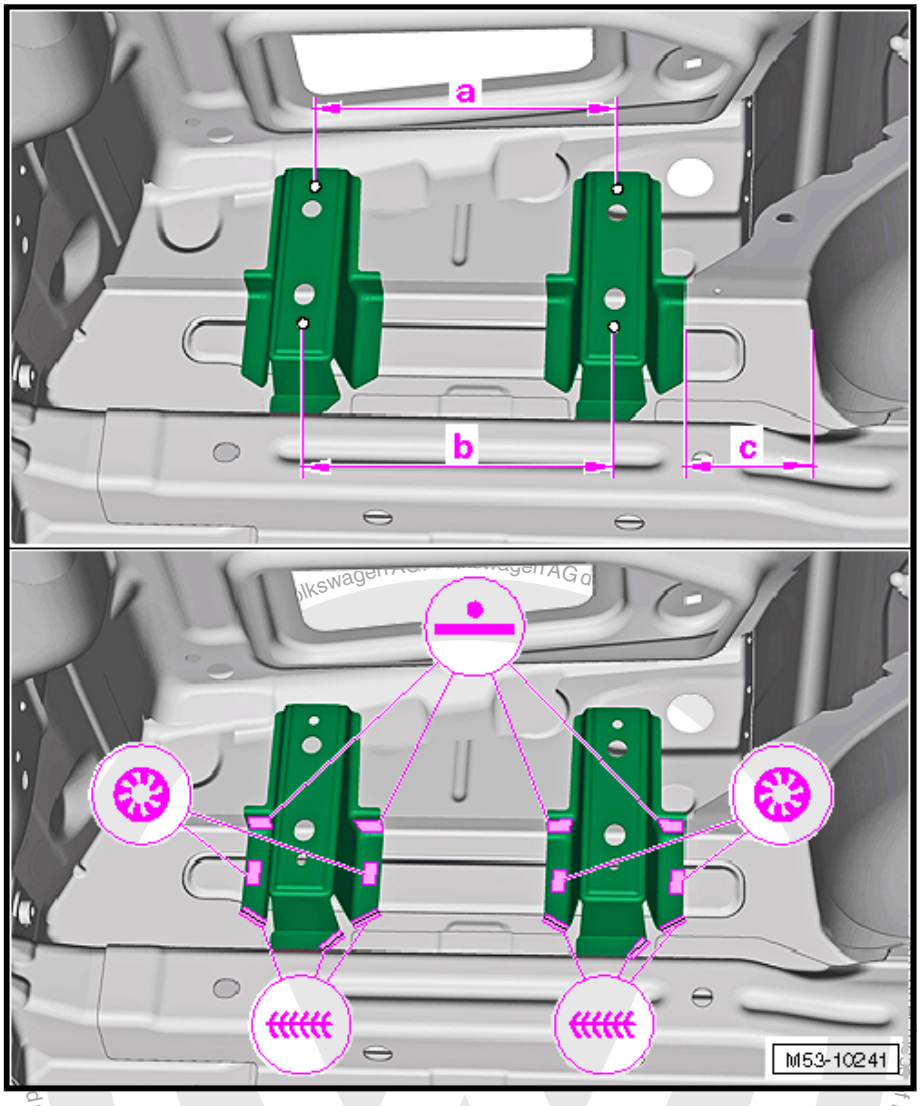
10.3.2 Welding

Note

New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.



– Apply 2K Body Adhesive - D 180 KD3 A2- in the areas in the areas where it was bonded during production.



– Adjust the new parts according to the specified measurements and secure them.

Dimension -a- = 193 mm ± 1.5 mm

Dimension -b- = 193 ± 1.5 mm.

Dimension -c- = 80 ± 1.5 mm.

– Weld the battery mount, SG plug weld seam, SG continuous seam and RP spot weld seam.

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RO: 53 55 55 00

11 Side Panel, Replacing Partial Section

WARNING

Follow all safety precautions.

If welding or cutting with spark-producing devices/tools or when plating in foamed areas where hazardous gases are produced that are harmful to humans and the environment, these procedures are to be omitted in each case.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

1 - Side Panel

2 - Bonded Area

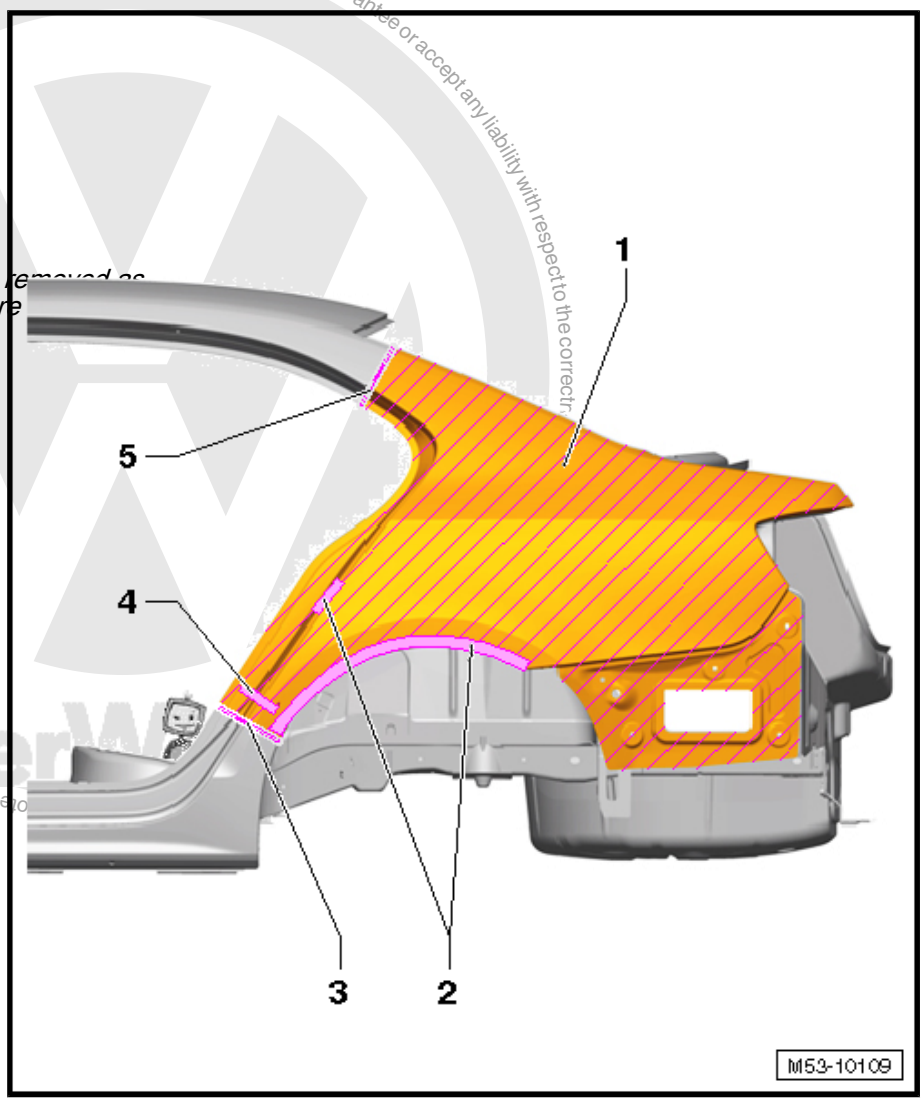
3 - Separating Cut

4 - Molded Foam Part

Note

Foam residue must be removed as much as possible before work.

5 - Separating Cut



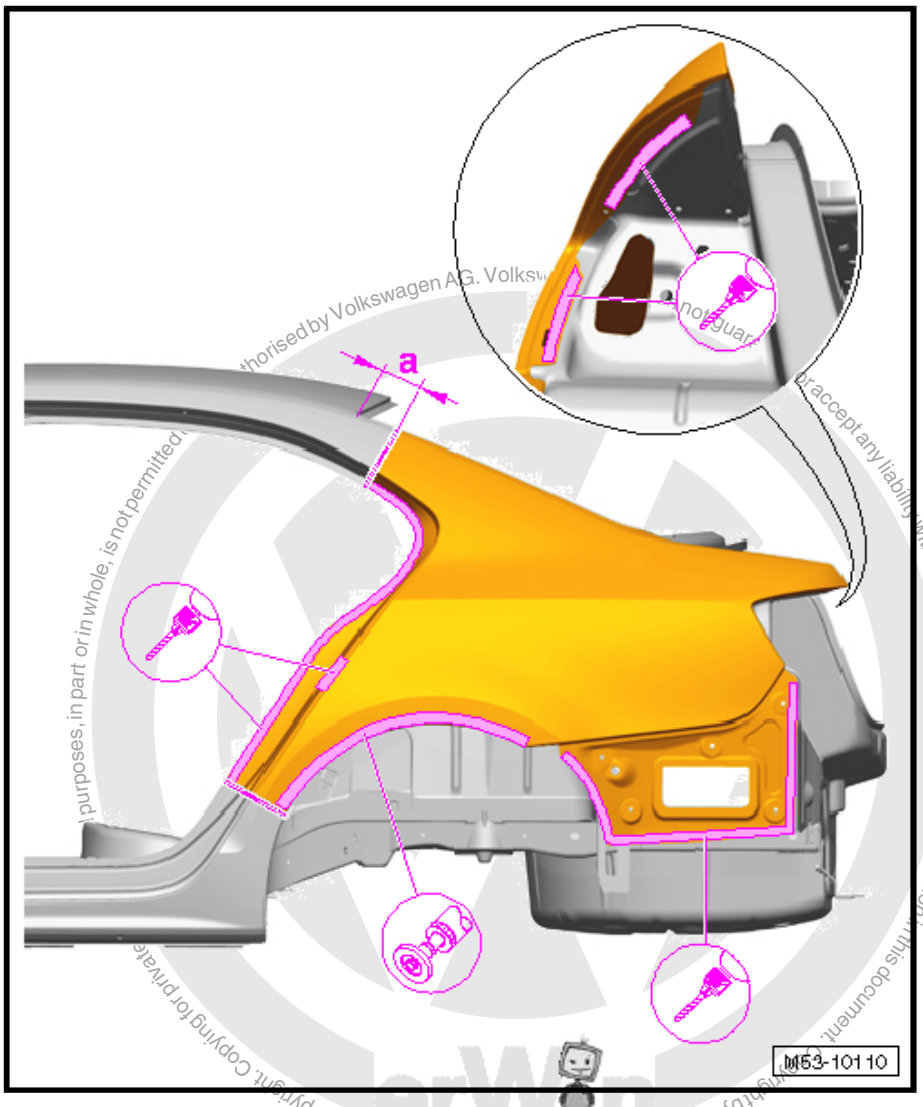
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11.1 Tools

Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

11.2 Removing

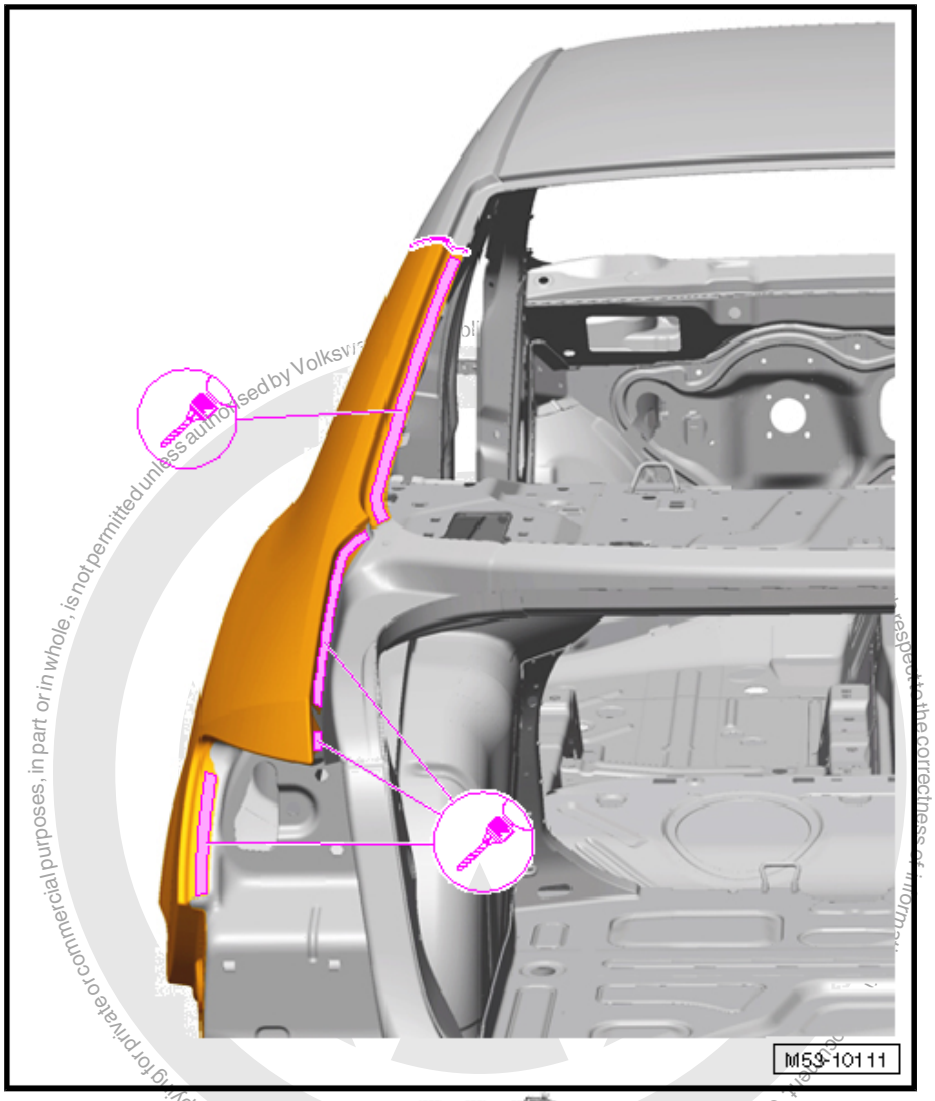


– Place separating cuts as shown.

Dimension -a- = 100 mm

– Separate the original joint.

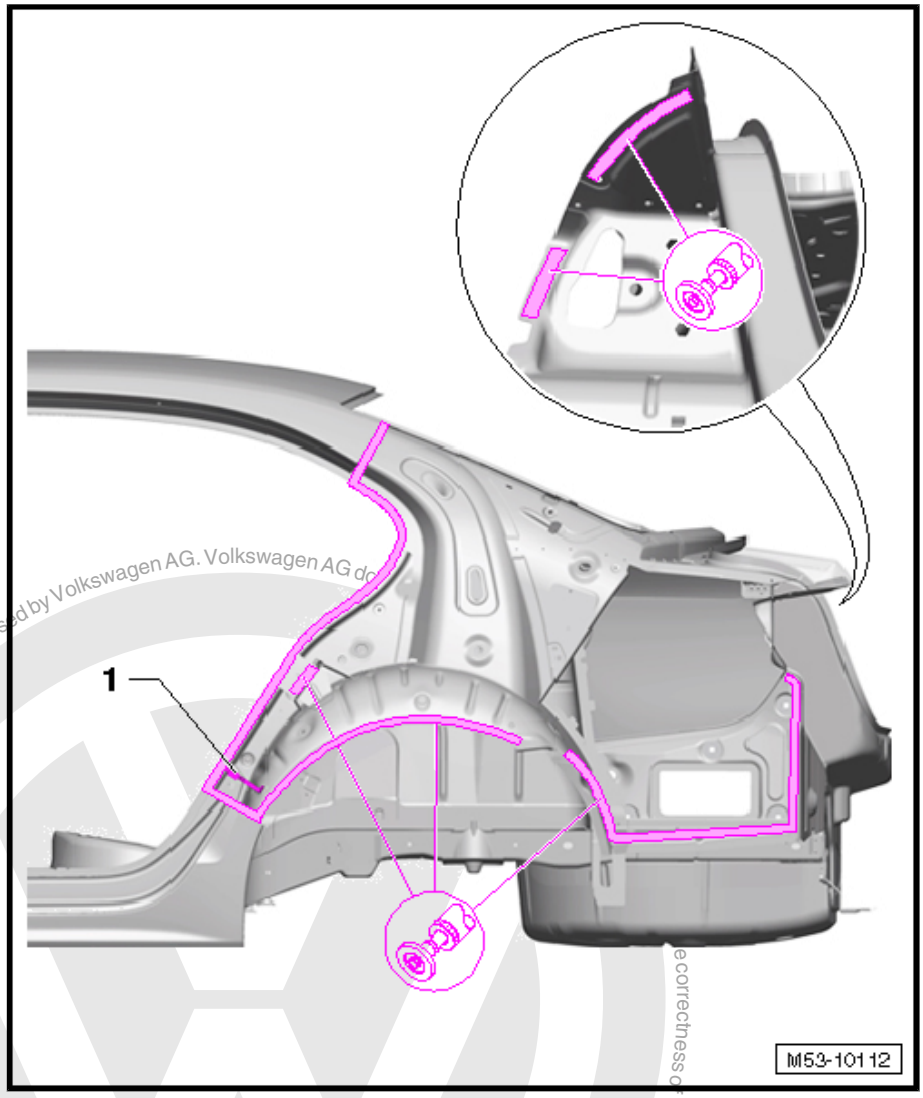
– Sand down the outer edge of the wheel arch.



– Separate the original joint.

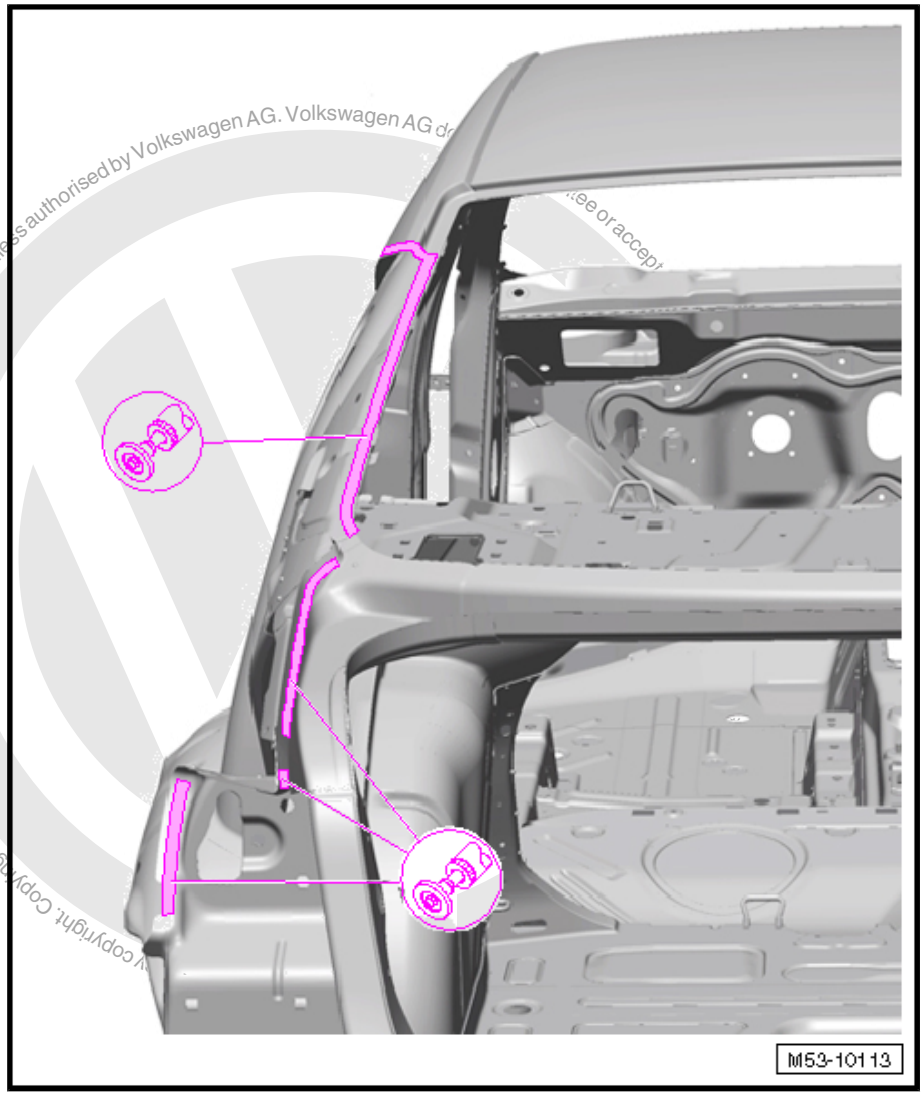
Note

Foam residue -1- must be removed as much as possible before sanding work.



– Remove residual material.
– Completely remove adhesive remains and grind bonding surfaces down to bare metal.
– Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
– Lightly sand the adhesive surfaces in the connection.
– Clean the flanging area on wheel arch (it must be free of dust and grease).

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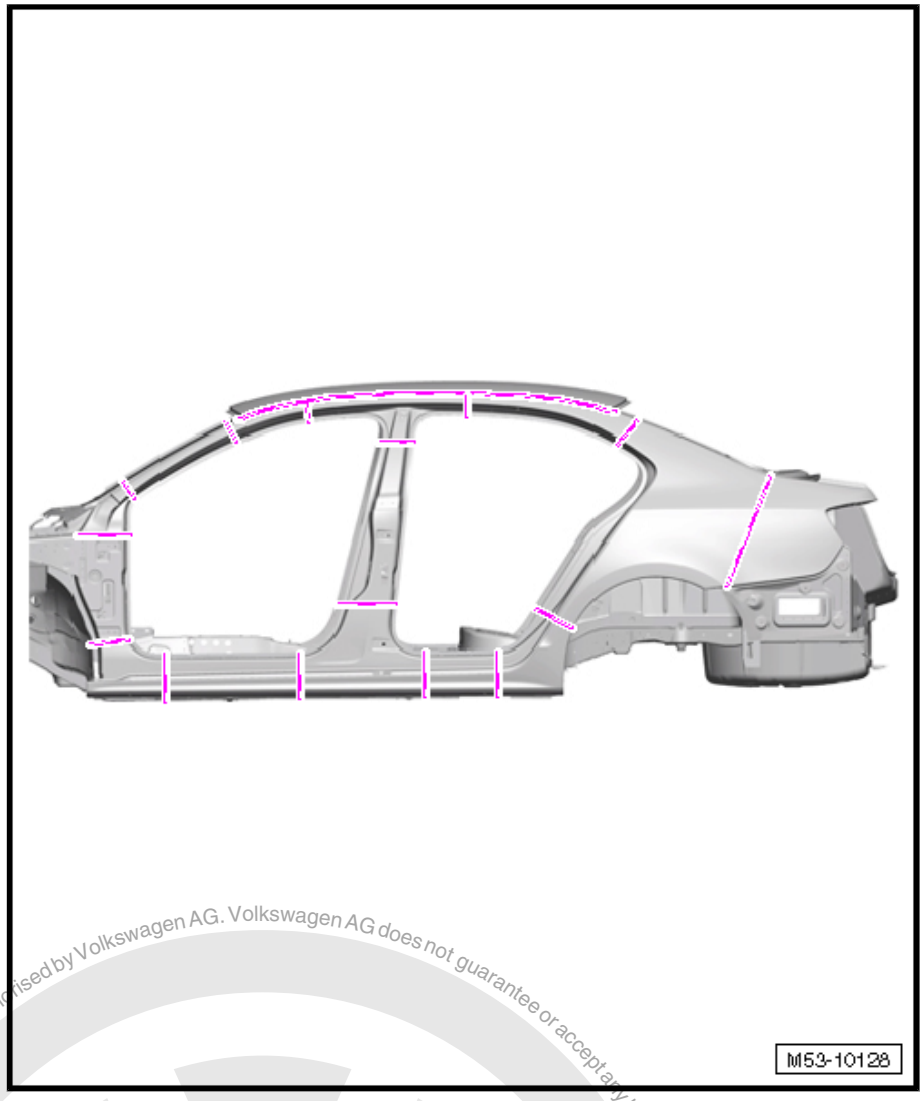
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– Remove residual material.

11.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "11.1 Tools", page 309 .



Note

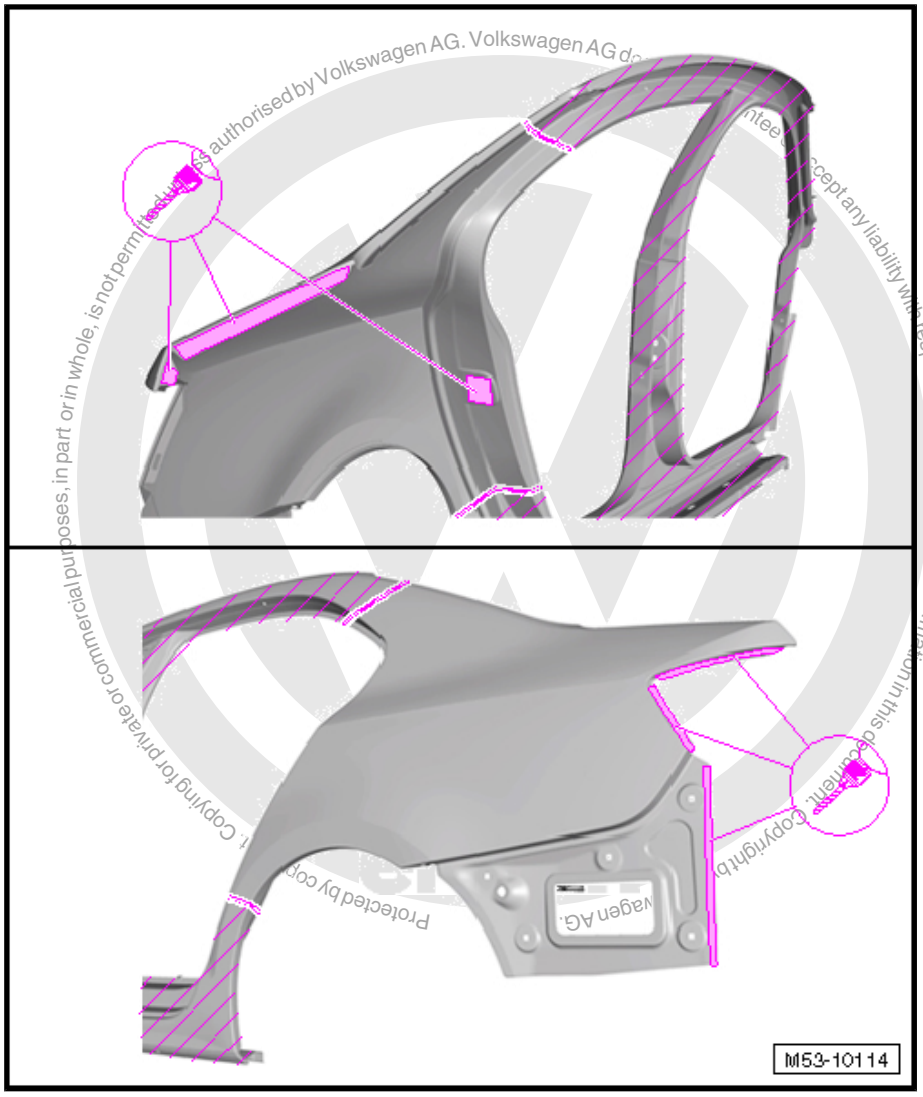
MIG soldered seams/gas-shielded arc continuous weld seam are permitted on the separating cuts shown in the illustration.

11.3.1 Preparing New Parts

New Part

- Side panel sub-part
- Molded foam part (depending on location of cut)
- 2K Body Adhesive - D 180 KD3 A2-
- 2K Polyuretane Adhesive - D 180 KD2 A1- (for the area near the fuel filler tube on the right side section)

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– Transfer separating cuts onto new part and cut to shape.
– Drill holes with a 8 mm diameter for a gas shielded arc plug weld seam.

11.3.2 Molded Foam Parts

Observe Repair Notes.

Molded foam part, refer to ⇒ General Information; Body Repairs, Body Collision Repair ; General Information, Molded Foam Components

Position of molded foam parts, refer to
⇒ “5 Molded Foam Parts”, page 7 .

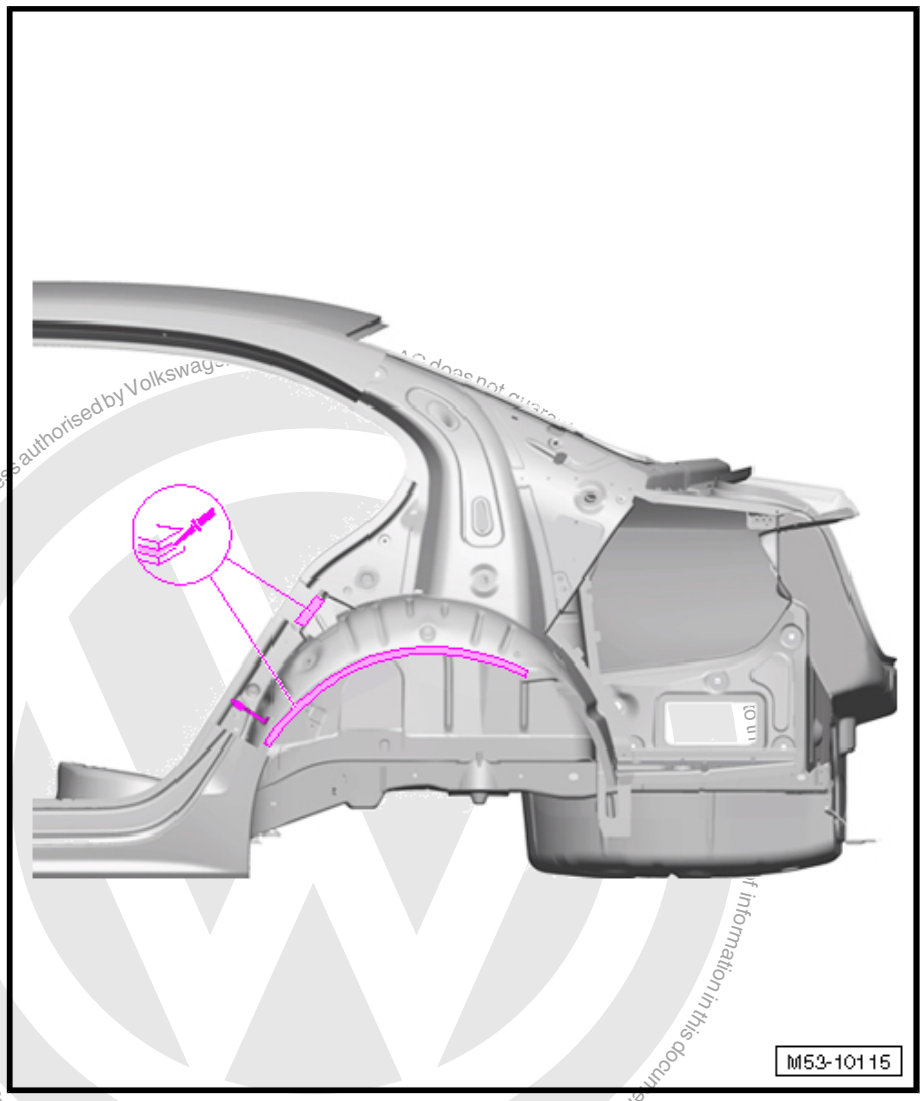
11.3.3 Welding

Note

- *New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.*
- *For the lock reinforcement, omit the welding areas for the gas-shielded arc plug weld seam when applying the 2K Body Adhesive - D 180 KD3 A2- .*
- *The thread for the striker pin mount must be cleaned after applying the adhesive.*
- *Apply 2K Body Adhesive - D 180 KD2 A1- around the fuel filler tube before welding the right side panel.*

– Fit new part to vehicle standing on its wheels or on Alignment Bracket Set and secure.

– Check fit with attachments.

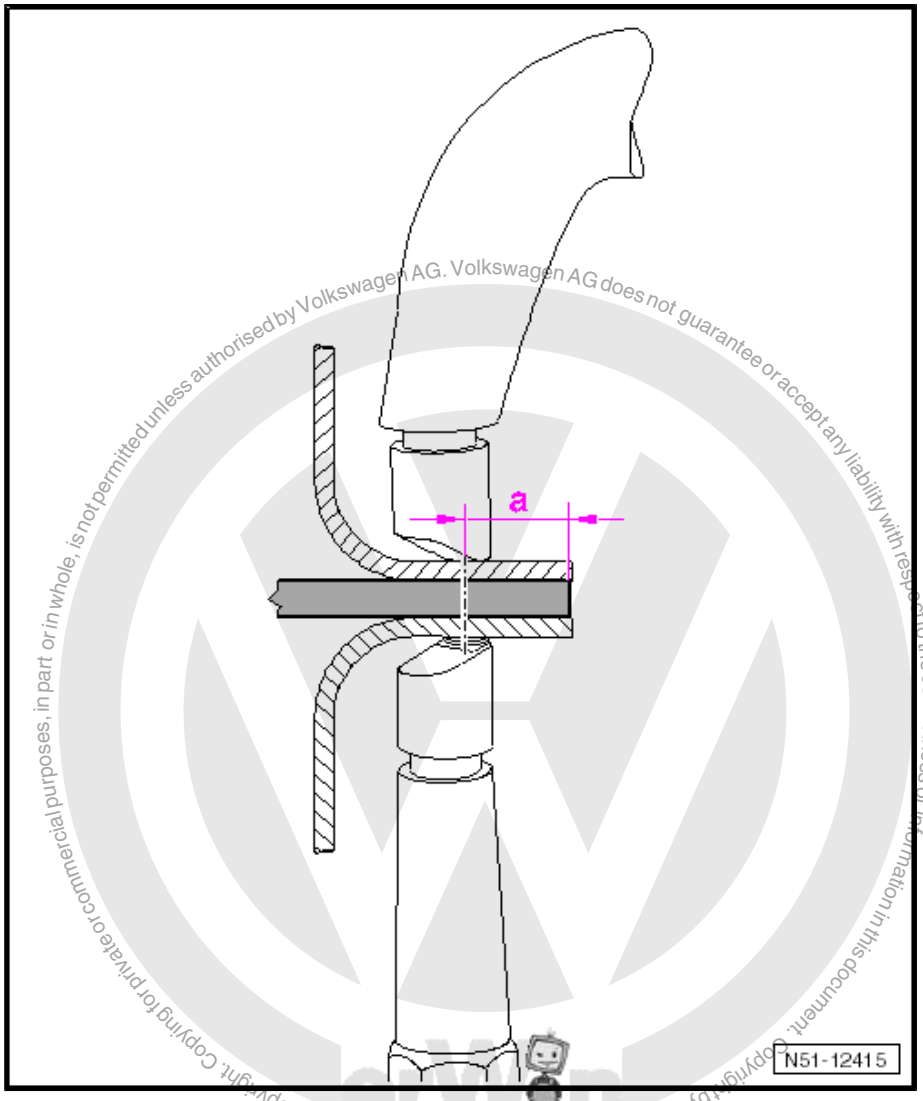


– Apply 2K Body Adhesive - D 180 KD3 A2- in the areas in the areas where it was bonded during production.

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Note

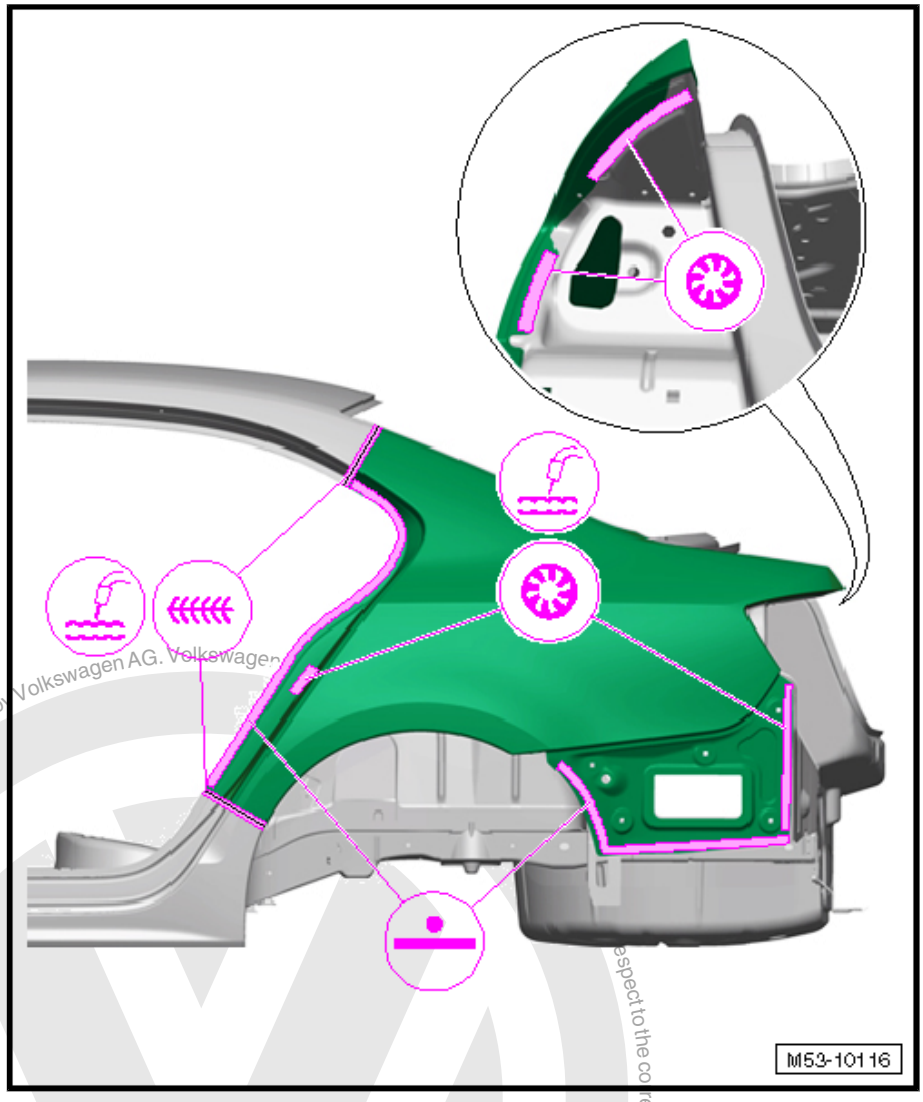
- *High-strength/highest strength hot formed is used on the A-, B- and C-pillars. The welding flanges in these areas are approximately 16 mm wide.*
- *If the weld points are placed on the edge of the hot-formed steel panels, the high temperatures will change the structure of the steel and this will negatively affect the crash worthiness.*



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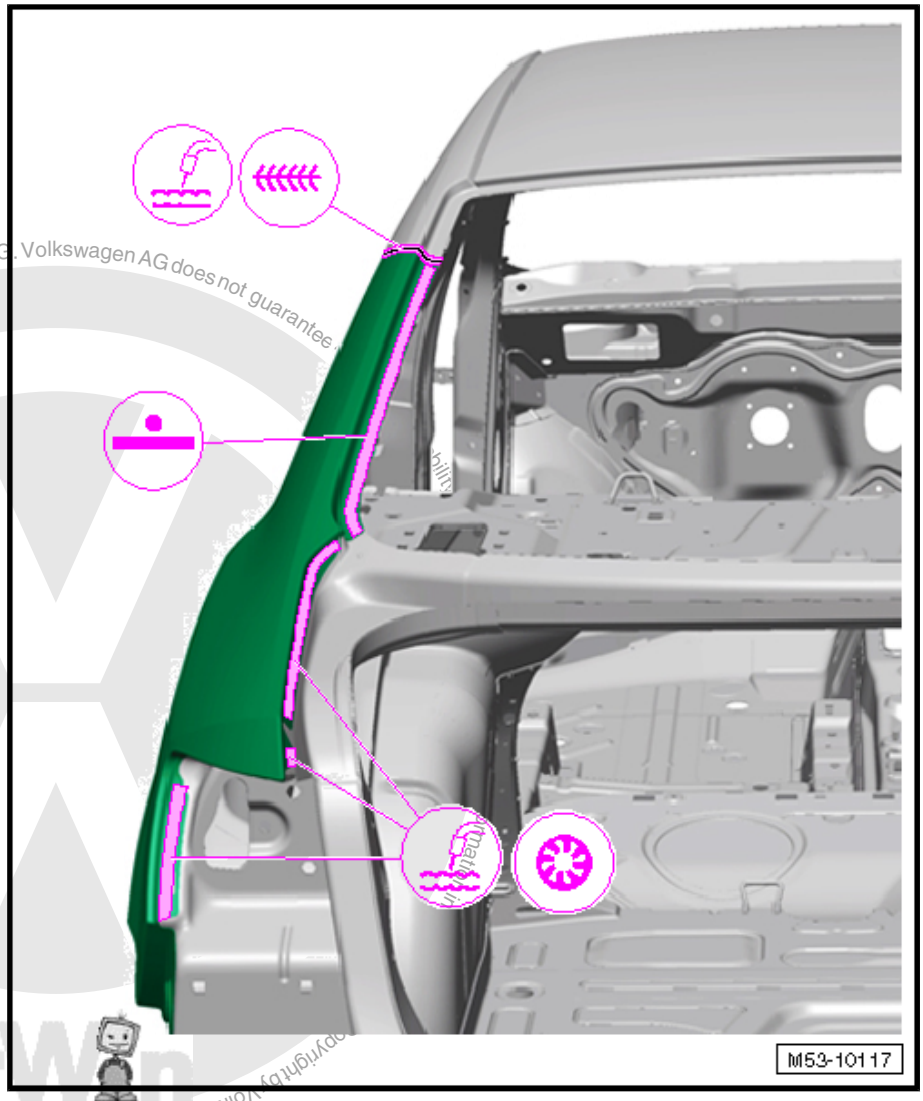
The weld points must be made as far as possible to the inside.

- Dimension -a- (8 mm) can be reached with beveled weld caps.



– Weld the side panel with a gas-shielded arc plug weld seam and a straight-line spot weld seam.
– Weld the separation cuts, either MIG-L stitch weld seam or a gas-shielded arc continuous weld seam
– Reform the wheel arch flange.

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– Weld the side panel inside the rear lid opening with a straight-line spot weld seam.

– Weld the side panel near the sealing channel, optional MIG-L plug weld seam/gas-shielded arc plug weld seam permitted

RO: 53 69 55 50

12 Outer Wheel Housing Liner, Replacing

WARNING

Follow all safety precautions.

Refer to ⇒ General Information; Body Repairs, Body Collision Repair ; Safety Precautions

- Side panel already removed, refer to ⇒ “11 Side Panel, Replacing Partial Section”, page 308
- Hybrid vehicles: tail lamp reinforcement already removed, refer to ⇒ “4 Tail Lamp Reinforcement, Replacing, Hybrid Vehicles”, page 268 .

1 - Outer Wheel Housing Liner

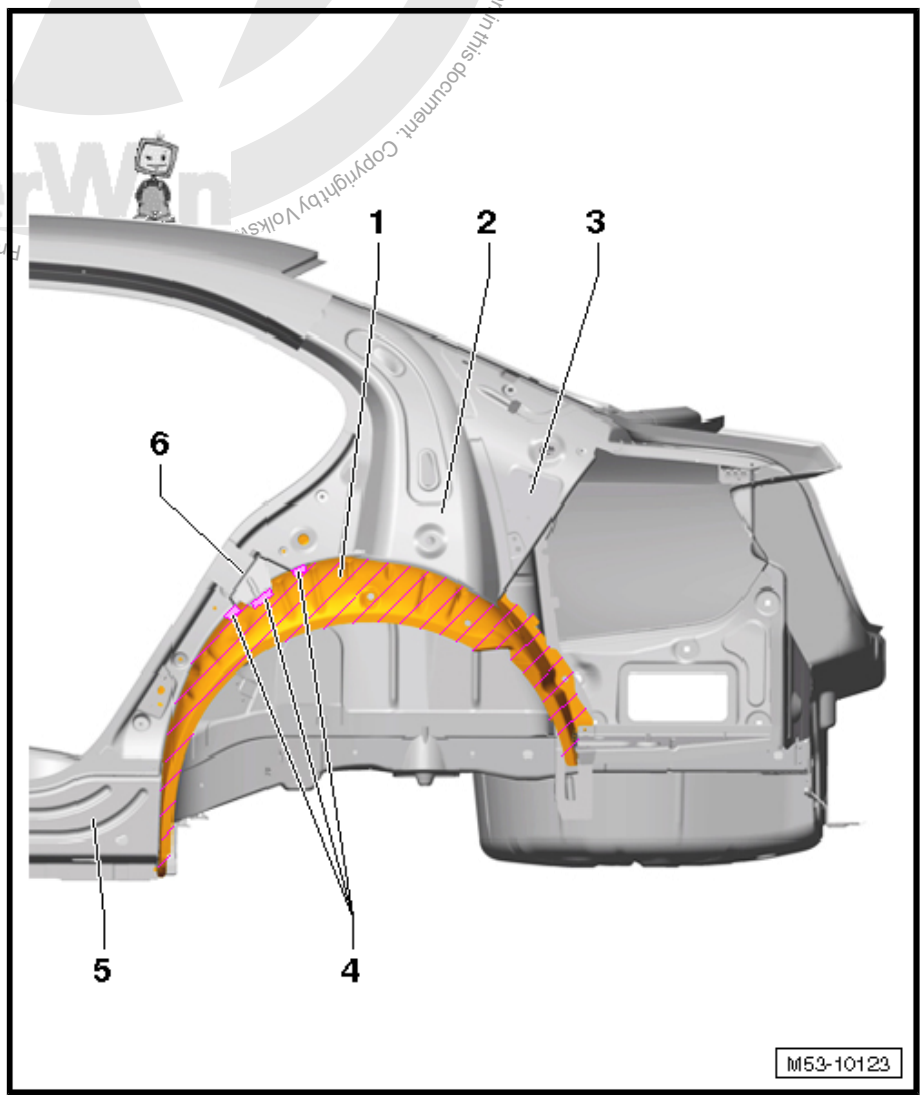
2 - C-Pillar Reinforcement

3 - Inner Side Panel

4 - Bonded Area

5 - Rear Sill Panel Reinforcement

6 - Striker Mount



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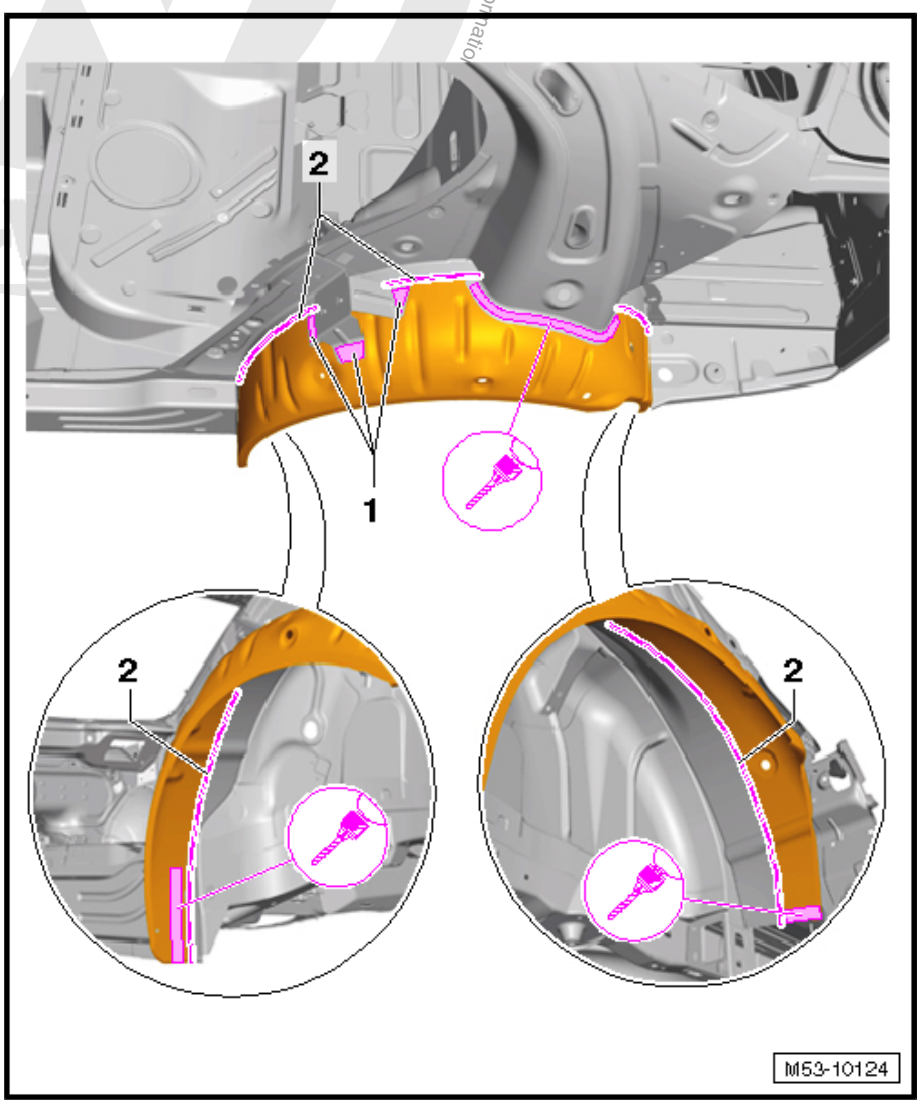
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12.1 Tools

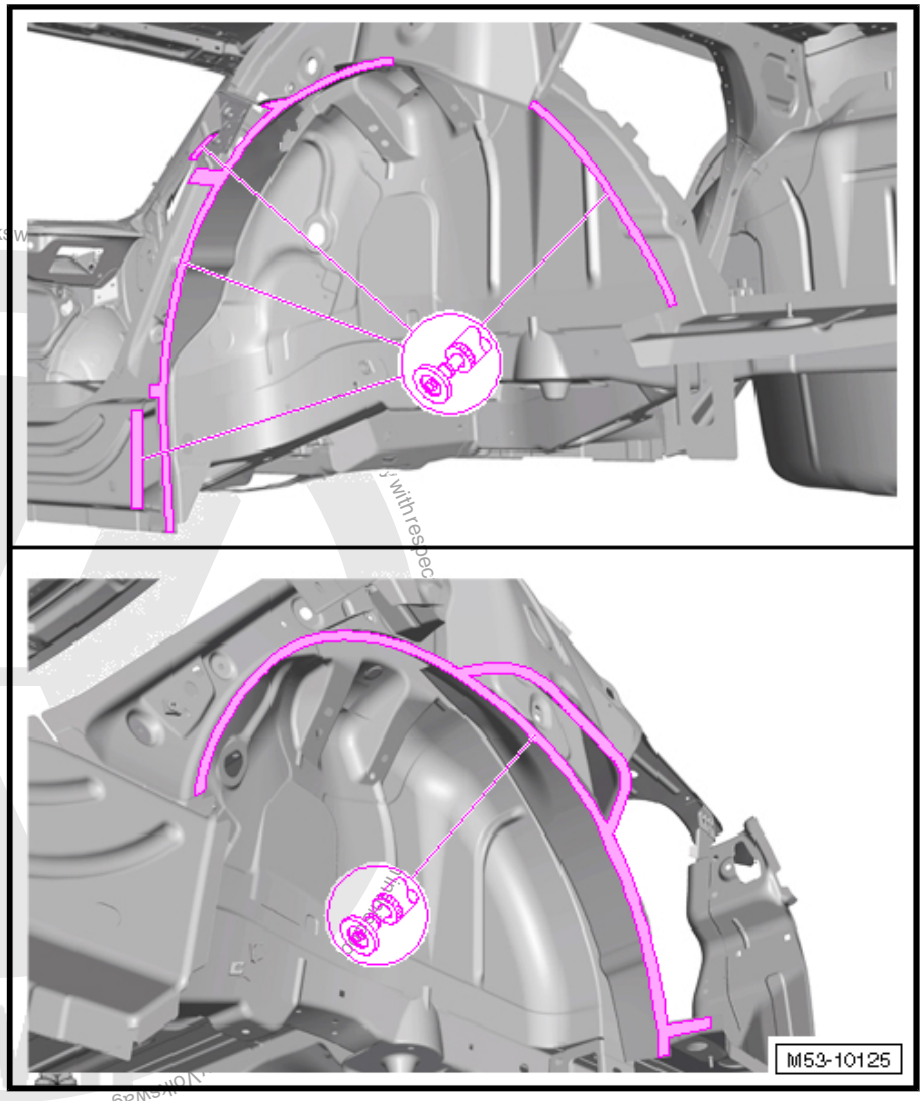
Note

- *Due to the different types of steel and material strength, use only welding equipment approved by Volkswagen AG to perform any service work.*
- *For a list of welding equipment and body tools approved by Volkswagen AG, refer to Workshop Equipment, VAGWorkshop Equipment Catalog, Body/Paint.*

12.2 Removing



– Make the separation cuts -2- as illustrated.
– Separate the original joint.
– Loosen the bonded areas -1- for the striker mount.



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- Remove residual material.
- Completely remove adhesive remains and grind bonding surfaces down to bare metal.
- Apply corrosion protection to the adhesive surfaces, which will not be welded, refer to Paint Repair Manual, Corrosion, Attachments and Welded Parts, Materials.
- Lightly sand the adhesive surfaces in the connection.

12.3 Installing

Note

Use only welding equipment approved by Volkswagen AG, refer to ⇒ "12.1 Tools", page 320 .

12.3.1 Preparing New Parts

New Part

- Outer wheel housing liner
- 2K Body Adhesive - D 180 KD3 A2-

Note

When marking the separating cut, allow 10 mm excess material for overlapping.



– Transfer separating cut onto new part and cut to shape.

12.3.2 Welding

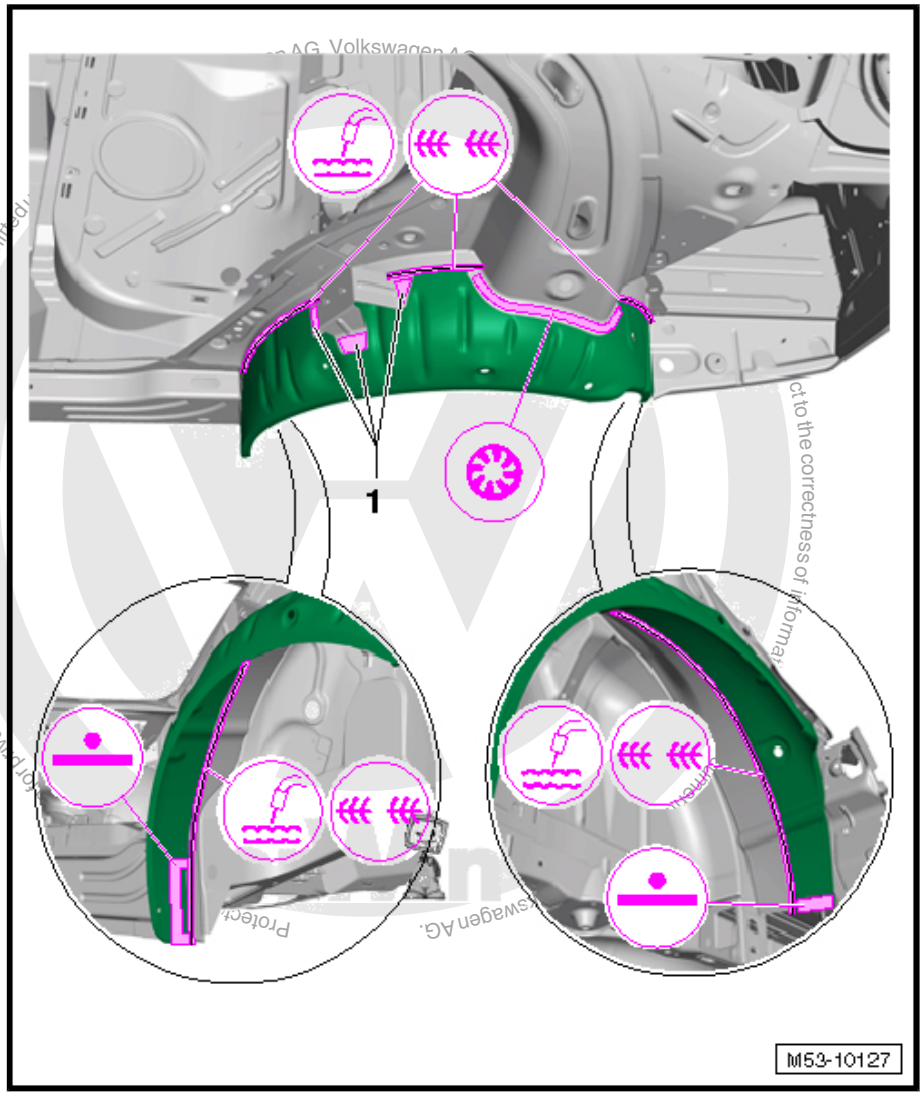
Note

New part must be installed within 90 minutes, otherwise bonding properties of adhesive will be impaired.

– Fit the new part to vehicle standing on its wheels or on an Alignment Bracket Set and secure.

– Check fit with attachments.

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– Apply the 2K Body Adhesive - D 180 KD3 A2- on the contact surfaces -1- of the striker mount.
– Weld the outer wheel housing liner -2- to the C-pillar reinforcement using a gas-shielded arc plug weld seam.
– Weld the outer wheel housing liner, either MIG-L stitch weld seam or a gas-shielded arc continuous weld seam

Hybrid Vehicles

– Install the tail lamp reinforcement, refer to ⇒ “4.3 Installing”, page 270 .

All Vehicles

– Install the side panel, refer to ⇒ “11.3 Installing”, page 312 .

Edition K0059071221 FU 09/10/2014 - ESP

13 Revision History

DRUCK NUMBER: K0059071221

Date	Edition Date	Job Type	Feedback #	Notes	Editor
05/19/2020	04.2020	Re-release	N/A		Joe Y
05/13/2020	04/2020	Factory Update	N/A		Joe Y
09/10/2014		Factory Update	N/A		Eric Puterbaugh

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Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Volkswagen retailer or other qualified shop. We especially urge you to consult an authorized Volkswagen retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Volkswagen.

- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.

- Volkswagen is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Volkswagen retailer parts department for the latest information.

- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the Volkswagen Factory Approved Scan Tool (ST).

- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.

- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.

- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it

- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.

- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.

- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.

- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.

- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

next

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Version 2.0

Cautions & Warnings

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.

- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.

- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly; do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Volkswagen specifications. Makeshift tools, parts and procedures will not make good repairs.

- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.

- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.

- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.

- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.

- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.

- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.

- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.

- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).

- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Volkswagen Service technicians should test, disassemble or service the airbag system.

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Version 2.0

Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.

- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the Volkswagen Factory Approved Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.

- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.

- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.



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